DOCUMENT RESUME

ED 264 499 CG 018 727

TITLE	An Evaluation Handbook for Health Education Programs in Smoking.
INSTITUTION	IOX Assessment Associates, Culver City, CA.
SPONS AGENCY	Centers for Disease Control (DHHS/PHS), Atlanta, GA.
REPORT NO	HHS/CDC/CHPE-84-0224
PUB DATE	Sep 83
CONTRACT	200-81-0622
NOTE	337p.
PUB TYPE	Reference Materials - General (130) -- Tests/Evaluation Instruments (160)
EDRS PRICE	MF01/PC14 Plus Postage.
DESCRIPTORS	*Evaluation Methods; *Health Education; Health Programs; *Smoking; Special Health Problems

ABSTRACT

This handbook provides a resource of assessment tools for systematic evaluation of health education programs in the field of smoking. Key fundamentals of systematic evaluation as applied to health education programs are reviewed. Explanations of the handbook's measures, their relationships, rationale, and procedures are given. Included are guidelines for using the measures with practical suggestions for their selection, administration, and scoring. The behavior, knowledge, skill, and affective outcomes upon which the handbook is based are discussed. Newly developed measures not yet verified, with their test specifications, as well as existing measures are given. A nine page annotated bibliography on evaluation methods is included. Handbook measures are indexed. (ABL)

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Evaluation Handbook for Health Education Programs in Smoking

IOX Assessment Associates, Culver City, CA

Prepared for

Centers for Disease Control, Atlanta, GA

Sep 83

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AN EVALUATION HANDBOOK
FOR
HEALTH EDUCATION PROGRAMS
IN
SMOKING

Prepared for

THE CENTER FOR HEALTH PROMOTION AND EDUCATION
CENTERS FOR DISEASE CONTROL

in conjunction with

THE OFFICE OF DISEASE PREVENTION AND HEALTH PROMOTION
OFFICE OF THE ASSISTANT SECRETARY FOR HEALTH
DEPARTMENT OF HEALTH AND HUMAN SERVICES

by

IOX ASSESSMENT ASSOCIATES
Culver City, California 90230

Contract No. 200-81-0622

(Project Officers: Walter J. Gunn, Diane R. Orenstein,
Donald C. Iverson, and Patricia D. Mullen)

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U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

50272-101

REPORT DOCUMENTATION PAGE	1. REPORT NO. HHS/CDC/CHPE - 84 - 0224	2.	3. Recipient's Accession No. (to be added by NTIS)

4. Title and Subtitle

An Evaluation Handbook for Health Education Programs in Smoking.

5. Report Date

6. September, 1983

7. Author(s)

IOX Assessment Associates

8. Performing Organization Rept. No.

9. Performing Organization Name and Address

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10. Project/Task/Work Unit No.

11. Contract(C) or Grant(G) No.

(C) None

(G)

12. Sponsoring Organization Name and Address

U.S. Dept. of Health and Human Services
PHS, CDC, CHPE, DHE, 1600 Clifton Rd., N.E, Atlanta, GA 30330

13. Type of Report & Period Covered

Handbook

14.

15. Supplementary Notes

This handbook is one of seven evaluation handbooks for health education programs. It contains a compilation of newly developed measurement instruments for knowledge, attitudes, skills, and behaviors, and a series of existing instruments.

16. Abstract (Limit: 200 words)

This Evaluation Handbook for Health Education Programs in Smoking contains a series of measuring instruments to be used in program evaluation. The measuring instruments are designed to assess program participants' behaviors, skills, affect, and knowledge. The handbook contains measuring instruments developed specifically for the handbook as well as a number of existing measures already being used by health educators. All measures, both newly developed and existing, can be used to assess the attainment of a set of program outcomes that had been judged significant by a group of experts in the field of

In addition to the measuring devices, the handbook also contains a brief introduction to salient considerations in the conduct of program evaluations in health education. Guidance is also provided in the use of the handbook's measures. Finally, because all the newly developed measuring instruments are criterion-referenced assessment devices, the test specifications for all newly developed measures are included in the handbooks.

17. Document Analysis a. Descriptors

Evaluation instruments; program evaluation

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

18. Availability Statement: To be available from NTIS	19. Security Class (This Report) N/A	21. No. of Pages 335
	20. Security Class (This Page) N/A	22. Price To be determined

(See ANSI-Z39.18) See Instructions on Reverse OPTIONAL FORM 272 (4-77)
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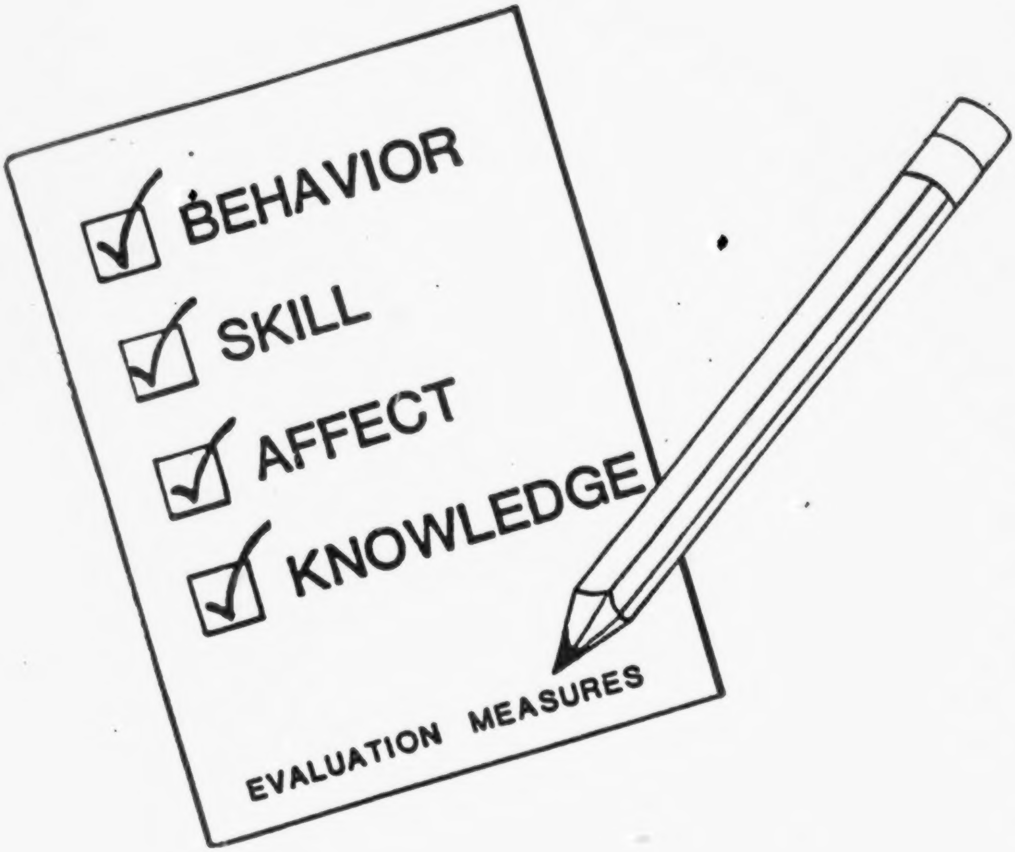
AN EVALUATION HANDBOOK FOR HEALTH EDUCATION PROGRAMS IN SMOKING



CENTERS FOR DISEASE CONTROL
Center for Health Promotion and Education
Atlanta, Georgia 30333

This handbook contains measures which have not yet been subjected to empirical verification. A subsequent project to validate the measures for use in health education programs is planned.

DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service

Centers for Disease Control
Atlanta GA 30333
(404) 329-3158

September 1983

Dear Colleague:

The Division of Health Education, Center for Health Promotion and Education, is pleased to provide you with one of the seven evaluation handbooks for health education. The development of these handbooks (in the areas of alcohol and substance abuse, diabetes, exercise, immunization, nutrition, smoking, and stress management) was initiated in 1979 and a contract was later awarded to IOX Assessment Associates. The process for creating each handbook and a list of the major contributors are presented in each handbook. We would like to express our appreciation to the additional individuals who served as reviewers for the handbooks and whose comments were very useful.

The handbooks are a useful resource for the appraisal of health education programs. Each handbook contains information on basic concepts regarding the evaluation of health education programs, a set of newly developed assessment tools for knowledge, attitudes, skills, and behaviors, test specifications for each instrument, and a collection of existing measures which have been used for health education program evaluation. The new measures were developed using a rigorous criterion-referenced test paradigm which relied heavily on the judgment of a panel of experts regarding (1) the specification of important outcomes that should be measured, (2) the specifications (rules) for generating test items to measure those outcomes, and (3) the test items themselves. The development strategy used to prepare the handbooks should produce instruments of high face validity. However, investigations are planned to secure empirical evidence supporting the validity of the measures in the handbooks.

Please contact us if you have questions about the development or use of the handbooks. The handbooks may be copied and distributed. If you do, CDC would appreciate being credited as the source of the handbook.

Sincerely yours,

Walter J Gunn

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PREFACE

In recent years health educators have increasingly recognized that systematic evaluation can help them appraise and improve their programs. For this potential to be realized, however, effective mechanisms for gathering relevant data are required. Until now, there have been instances where critical information about a program's effects has not been collected because of a lack of suitable measures for gauging program effects. The purpose of this handbook is to rectify, at least in part, this deficiency in the evaluation of health education programs in smoking.

This book is one of seven health education evaluation handbooks resulting from a project initiated by the United States Centers for Disease Control (CDC) in 1980.* The handbook is not intended to be prescriptive or all-inclusive. Those who evaluate smoking programs should regard the handbook only as a resource, that is, a collection of assessment tools which may be of use. The extent to which the handbook is actually useful depends, in large part, on the extent to which it contains materials that correspond to the evaluation needs of a particular smoking program.

A CAPSULE HISTORY OF THE HANDBOOK'S CREATION

This handbook has been created by an external contracting agency, selected competitively on the basis of responses to a CDC-issued request for proposals. The contractor was to collect and develop evaluation measures for critical behavioral, knowledge, skill, and affective outcomes in the area of smoking. A panel of experts guided the contractor in determining which outcomes were important enough in smoking health education programs to require assessment devices. Three members of the panel were subject matter specialists who were selected on the basis of suggestions from prominent national associations with a primary mission in smoking. These nominations were screened to ensure a panel with a balanced view of the field. So, for example, at least one of the subject matter experts represented a national association and at least one possessed direct community level experience in administering local health education programs in smoking.

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* *The seven handbooks focus on the areas of alcohol and substance abuse, diabetes, exercise, immunization, nutrition, smoking, and stress management. Information regarding the handbooks is available from the Centers for Disease Control.*

In addition to these subject matter experts, a health education generalist selected from nominees suggested by national health education associations served on the panel. Two specialists in evaluation and testing, one of whom was a member of the contractor's staff, also served on the expert panel. Additional subject matter experts representing interested national associations were also invited to serve as panelists. The names and affiliations of the smoking panelists are provided at the end of the Preface.

The expert panel met for two days at the beginning of the project in order to isolate the primary outcomes which smoking health education programs could be expected to promote. Preliminary statements reflecting these outcomes were suggested, then prioritized by the subject matter and health education panelists. The evaluation and testing specialists did not participate in this setting of priorities.

The preliminary outcome statements selected by the panel were refined by the contractor's staff, then mailed to panelists and other interested individuals and organizations, all of whom rated the importance of each statement. The prioritized list of outcomes that resulted was used to guide the selection and development of the handbook's measures.

All newly developed measures, along with the test specifications used to prepare them, were mailed to the panelists for review. In addition, many of the new measures were tried out with small groups of respondents. The new measures were revised based on the informal tryouts and the panelists' review comments. All of the new measures were also reviewed by the contractor's staff in an effort to eliminate any potential sex, race, religious, or socioeconomic bias.

While the new measures were being developed, a comprehensive literature search was conducted to locate existing measures which might match the panel-identified outcomes. These measures were carefully screened for their correspondence with the panel-identified outcomes. All measures which matched one or more outcomes were then reviewed to ensure that they possessed no major technical flaws which would make them unsuitable for program evaluation. Whenever there was substantial duplication among existing measures, the measure with the strongest supporting psychometric data, or the measure that was clearest and easiest to use, was chosen. All existing measures which passed both the content screening and the subsequent reviews are included in this handbook.

THE HANDBOOK'S CONTENTS

The handbook's various sections are described below.

CHAPTER ONE: PROGRAM EVALUATION CONSIDERATIONS FOR HEALTH EDUCATORS - a review of key fundamentals of systematic evaluation as applied to health education programs.

CHAPTER TWO: A DESCRIPTION OF THE HANDBOOK'S MEASURES - explanations of the handbook's four categories of measures, the relationships among these measurement categories, the rationale behind the types of measures developed for the project, and the procedures used to select existing measures.

CHAPTER THREE: USING THE HANDBOOK'S MEASURES - guidelines for using the handbook's measures in program evaluation, including practical suggestions for the selection, administration, and scoring of measures and alternative ways of employing the handbook's resources.

CHAPTER FOUR: SMOKING PROGRAM OUTCOMES - the behavior, knowledge, skill, and affective outcomes upon which the handbook is based.

CHAPTER FIVE: NEWLY DEVELOPED MEASURES - a collection of measures developed specifically for this project. (It must be stressed that these new measures have not yet been subjected to empirical verification, hence should be regarded as assessment devices whose technical qualities have not yet been verified.)

CHAPTER SIX: EXISTING MEASURES - extant measures selected for their correspondence with the handbook's outcomes.

CHAPTER SEVEN: TEST SPECIFICATIONS - the rules and content information used to create the measures specifically developed for this handbook.

ANNOTATED EVALUATION BIBLIOGRAPHY - an annotated listing of follow-up readings for handbook users who wish to deal at greater length with the topics developed in Chapters One through Three.

INDEX OF HANDBOOK MEASURES - a list, by title, of all the measures contained in the handbook.

ACKNOWLEDGMENT OF CONTRIBUTORS

The following individuals served as panelists for this handbook:

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The project which resulted in the creation of this handbook was funded by the Centers for Disease Control in Atlanta, Georgia. The project was initiated by the Research and Evaluation Staff, Health Education Division, of the Center for Health Promotion and Education. Dr. Walter J. Gunn, chief of that group, conceptualized the project, set forth its specifications, and supplied technical guidance throughout its existence. The project was originally conceived during conversations between Dr. Gunn and Dr. Carol D'Onofrio of the University of California, Berkeley School of Public Health. Throughout the project, Dr. Gunn and Dr. Diane Orenstein of the Centers for Disease Control and Dr. Donald Iverson and Dr. Patricia Mullen, both formerly of the Office of Health Information and Promotion, Office of the Assistant Secretary for Health, Department of Health and Human Services, served as project officers.

As the handbook progressed, numerous health educators offered their insights. Without their expert assistance and without the continuing technical counsel of the project's officers, development of this volume would have been impossible.

The members of the staff of IOX Assessment Associates who participated in the handbook's development are Eloise Appel, Phyllis Jacobson, Rebecca Jaramillo, Elaine Lindheim, Margaret Mulne, W. James Popham, Celia Rodrigo, John Ruggles, Laurie Salah, and Elanna Yalow. Robin Harte and Cecilia Marcelino prepared the handbook text.

CHAPTER ONE

PROGRAM EVALUATION CONSIDERATIONS FOR HEALTH EDUCATORS

In recent years, a variety of program evaluation strategies have received substantial attention. Many of these recommended approaches to evaluation have been formally designated as evaluation "models," that is, systematic conceptualizations of the step-by-step manner in which evaluations should proceed. Some approaches emphasize the effects of a program. Others focus on the quality of a program's procedures. Still others attend primarily to the costs associated with a program. Today's health educators will find the evaluation terrain well charted, although its borderlines often reflect advocacy rather than agreement.

The purpose of this chapter, however, is not to promote a particular evaluation model for health education programs. Rather, it will focus on considerations central in any evaluation effort.* Sometimes a program evaluation will be conducted by an individual not affiliated with the program itself--an individual formally designated as a program evaluator. Far more frequently, an evaluation will be carried out by the program personnel who are actually operating the program. These health educators will simply change roles for a while, exchanging their program implementation responsibilities for program evaluation responsibilities. Thus, whenever we use the term "evaluator" in these introductory

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In this introductory chapter an attempt will be made to present a series of salient considerations related to the evaluation of health education programs. Clearly, it is impossible in a single chapter to discuss all evaluation topics with adequate depth. Hence, a set of references for further reading has been provided. This evaluation bibliography, which has been annotated to provide a general description of each volume's contents, can be found on pages 321-329. Throughout the handbook's early chapters, readers will be directed to various of these references for further information about the topics being discussed.

chapters, we mean to refer both to the evaluator specialist and to the program staff member serving as evaluator.

One major theme runs throughout the sections that follow, namely, that evaluation is a process that can markedly enhance the effectiveness of health education programs. Evaluation should not be conducted merely for the sake of evaluation. Instead, we evaluate in order to find out if programs are working and how to make them work better. When evaluation is used in this way, it can make a significant contribution to the physical and psychological well-being of health education program participants and the community at large.

FOCUSING THE EVALUATION

Effective evaluations improve decisions about programs. Anyone setting out to evaluate a health education program, therefore, should focus the evaluation on the decisions that are likely to be at issue. In order to determine what these decisions are, an evaluator needs to have a clear idea about the purpose(s) of the evaluation as well as a clear identification of the individual(s) or group(s) who may use the evaluation's results.

The nature of the program being evaluated makes a substantial difference in an evaluation's focus. Some health education programs are carried out chiefly to develop and refine the program itself. We can refer to these programs as experimental programs, in the sense that they are programs of yet unproven effectiveness. Evaluations of experimental programs attempt to isolate effective programs or effective program components. Other health education programs, referred to as demonstration programs, offer proven approaches in an effort to secure support or adoption from a larger clientele. Such programs have two audiences, the program's participants and the individuals or groups whom the demonstration is supposed to convince. When evaluating demonstration programs, we want to determine whether a program has been disseminated with fidelity to its original conception and, if not, why. Finally, there are service programs, which use proven approaches to improve the health and well-being of designated target groups. In such programs, evaluation often takes the form of monitoring.*

**For an extended consideration of these three types of programs, see Gunn, W. J. Suggested guidelines for evaluation of health education programs. A paper presented at the Fifth International Conference on Health Education, London, September, 1979.*

In these three types of programs, evaluation activities will differ depending on the purpose of the evaluation, the type of health education program being evaluated, and the nature of the decision-makers for whom the evaluation is being conducted. But program evaluation is needed in all three kinds of programs. Too often program personnel avoid evaluation on the grounds that theirs is only a demonstration program and, hence, needs no systematic appraisal. Or, again, those carrying out a service program might fail to evaluate their efforts because, "after all, we are merely disseminating a proven methodology." In all cases, however, the issue is not whether to evaluate, but how.

OBJECTIVES AND EVALUATION. Health education programs are designed to bring about worthwhile effects. Most health education programs, therefore, are organized around some form of program objectives. The more explicitly these objectives can be stated, the more useful they are in carrying out evaluations. Indeed, one consideration in conducting an evaluation is the extent to which a program's objectives have been achieved. It is for this reason that evaluators often work with program personnel to create objectives which clearly describe the desired post-program behaviors (including performance on measuring devices) of program participants. Too often program designers describe their objectives in such lofty and loose language that it is impossible, even after the program is over, to tell whether those objectives have been attained.

There is substantially more to program evaluation, however, than merely discerning whether a program's goals have been achieved. For example, there may be program effects which, although profound, were not anticipated in the program's stated objectives. In addition, there is the quality of the objectives themselves. Perhaps the program's goals are truly trivial. A skillful evaluator can profitably work with program personnel to improve the nature of their aspirations. Clarified and more defensible objectives can be a boon to both program personnel and evaluators.

Some evaluators believe that a program evaluation must be carried out exclusively in relation to a set of specific behavioral objectives, that is, objectives stated in terms of participants' post-program behaviors. This is a particularly limited notion of educational evaluation. Although in the late sixties and early seventies there were many who urged educators to organize their instruction around litanies of hyper-detailed behavioral objectives, these objectives failed to prove particularly useful in program evaluations.

Specificity did not automatically yield utility. Instead, too many targets turned out to be no targets at all. More recent thinking regarding behavioral objectives suggests that program objectives, while still measurable, should embrace larger domains of outcomes. Today's health education programs, rather than being organized around 50 miniscule objectives, might be organized around a half-dozen or so more global, but measurable, targets.

SUMMATIVE AND FORMATIVE FUNCTIONS. Since the expressions "formative evaluation" and "summative evaluation" were introduced over a decade ago, considerable attention has been given to the virtues of each type of evaluation. In the late sixties and early seventies, a good many evaluators were persuaded of the virtues of summative studies to provide a final judgment of a program's overall effectiveness. To their distress, however, it often turned out that definitive judgments about program effectiveness were difficult to achieve. Rarely did a summative evaluation settle conclusively whether a given program was sufficiently meritorious to make a go/no-go decision on the basis of that evaluation alone. More often than not, a host of complicating elements influenced the final decision far more than the results of an evaluation study.

As a consequence, it became increasingly clear that there were many instances when formative evaluation studies might prove more useful. Formative evaluation is not end-of-the-line evaluation. Rather, it is an ongoing endeavor conducted as the program is designed, installed, and maintained. Whereas summative evaluation's mission is to provide a final judgment of a program's overall merit, formative evaluation's mission is, on a continuing basis, to bolster a program's quality. The effective formative evaluator functions less as an external judge and more as a collaborator, a member of the team whose task it is to monitor the program in order to improve its quality and the decisions regarding it.

These two evaluative roles are not mutually exclusive. An evaluator's main task is to collect information that can be used to improve the decisions made about programs. Evaluation should identify the areas in which a health education program is having an impact, as well as those in which it is not. Effective components can then be retained; ineffective components can be strengthened or dropped. The systematic collection of information regarding health education programs can provide a solid data-base for the continuing refinement of such programs and for improvement in the general level of services provided.

CONDUCTING EVALUATION STUDIES

How can evaluations be conducted so as to achieve their maximum benefits? It is sometimes thought that program evaluations must include complicated and elaborate data-gathering designs in order to yield decisive and compelling data. This is simply not the case. Program personnel and evaluators should strive to conduct their studies and gather data in such a way that the ambiguity of results can be kept to a minimum. That is, evaluations must attempt to determine whether a program works, what makes a program work, or what prevents it from working. Evaluation data-gathering designs serve as the means to this end by setting forth the procedures to be used in exploring the nature and impact of a program.

The design we choose for an evaluation will determine the inferences we can make about a program's overall impact on participants and the effectiveness of its various components. To select the best designs for their investigations, evaluators must have a broad knowledge of the available design alternatives and the strengths and weaknesses associated with each. Evaluators must also work closely with program staff to determine which decision options can actually be illuminated by evaluation studies. The most sensible evaluation study for a given context can then be planned.

RIGHTS OF HUMAN SUBJECTS. Health education programs are designed to improve individuals' health and well-being. When we evaluate those programs, therefore, we typically focus on their impact on human beings. Some evaluators, however, become so caught up with the importance of appraising a health education program that they overlook the rights of the individuals being evaluated.

Above all, an evaluator should be guided by a respect for human dignity, hence should not engage in evaluative activities which in any way demean an individual's rights. Prominent among the principles that should guide evaluators is informed consent. The principle of informed consent requires that an evaluator secure, in advance of the study, agreement of all participants in an investigation. This consent is obtained after the potential participants have learned about the nature of the investigation, at least insofar as their participation is involved. This principle properly reflects the evaluator's concern for human dignity, because it rules out the possibility of making individuals serve, unknowingly, as subjects in an evaluation.

A key tenet in most ethical codes regarding human subjects insists on the confidentiality of all information gathered about participants during an evaluation. Because the evaluator is not concerned with an appraisal of individual participants but, rather, with the worth of health education programs, the principle of participant confidentiality usually poses no problems. Evaluators must be careful, however, to devise protective safeguards, such as anonymous completion of forms and careful handling of data, that ensure the confidentiality of the data.*

INTERNAL AND EXTERNAL VALIDITY. Characteristically, an evaluation seeks to determine whether individuals have changed as a result of their participation in a program. Can observed changes in the status of participants be attributed to the program? Could other factors such as participant maturation, familiarity with the measures used in the evaluation (testing), or external influences such as a mass media campaign (history), account for the observed changes? Such questions revolve around the internal validity of the evaluation, that is, the validity with which we can infer that the program caused the effects we find. Ideally the data-gathering design should help to rule out explanations, other than the program, for measured effects. Threats to internal validity weaken the ability to attribute observed effects to the program and not to other factors.

Another important issue involves the external validity of evaluation studies. Can the findings from a specific evaluation be generalized to the next group of participants or to variations of the program (for example, to a similar health education program held in a different place or during the following year)? Could we expect the program to have the same impact in other settings or at other times? What would be its effects with different participants, modes of presentation, or program personnel? External validity focuses on the need to demonstrate that the observed program effects can be expected to occur under conditions other than those associated with the specific program being evaluated. If evaluations possess external validity, they can serve as more than tributes to successful programs or postmortems for unsuccessful ones. Such evaluations can provide useful information as program personnel look to the future.

**For additional information about the rights of human subjects and the ethics of evaluation, see Annotated References Nos. 1, 21, and 30.*

It is important to distinguish between internal and external validity, for different information may be required to establish each one. A procedure that increases internal validity may weaken external validity. Experimental control, which enhances internal validity, must be weighed against feasibility and generalizability. Evaluators must try to balance the problems associated with threats to internal and external validity by selecting a data-gathering design that best addresses the information needs of the program and allocating evaluation resources accordingly. These priorities must come from the context of the program itself, because there are instances in which an evaluator should stress one type of validity rather than the other. Emphases on internal or external validity will vary as a function of the program decisions to be made.*

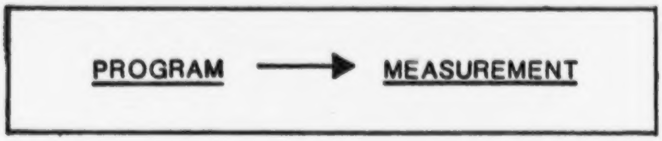
EVALUATION DESIGN OPTIONS

The key to selecting an appropriate evaluation design is to pick the one that best deals with the needs of those involved with a program, such as the program's staff, participants, or funding agency. In some instances, health educators may be interested in the effects of the particular program that they are providing: "Will participants be able to stop smoking after attending this program?" In other instances, health educators may be trying to develop model programs that can be disseminated locally or even nationally: "Can we develop a program that will help individuals refrain from smoking, whether they are teenagers in Duluth, working mothers in Tampa, or retired business executives in New Haven?" An evaluator would have to design very different studies in order to answer these fundamentally different questions. As indicated earlier, health educators must design each study so that it serves the specific purposes of that evaluation. There is no such thing as a general-purpose evaluation.

By understanding a few basic principles, evaluators can select designs well suited to their needs and, perhaps more importantly, determine the limitations of whatever design they implement. No evaluation can be perfect. Every evaluation leaves some questions unanswered. Evaluators need to be clear regarding what they have learned about a program and the degree of certainty associated with their findings, then convey this information to other interested audiences.

**For additional information about internal and external validity issues, see Annotated References Nos. 6, 9, and 10.*

To illustrate some of the major considerations in selecting data-gathering designs, consider a six-month health education program aimed at modifying Behavior X. If participants' status on Behavior X were measured at the close of the program, we could represent that situation schematically as follows:



If this were the design employed, what could you tell about the program's impact on participants' behaviors? Using such a design, how confident would you be that the participants' reported behavior changes were attributable to the program?

It would be difficult, with confidence, to attribute any change in behaviors to the health education program. The program, indeed, may have been totally ineffectual, and participants' post-program behaviors might be identical to those they possessed before the program. The measurement process might be detecting behavioral patterns that participants brought to the program, not those that were affected by the program. Because we have no measure of behaviors prior to the program, we can't distinguish between preexisting behaviors and program effects. Hence, with this data-gathering design, it may be impossible to determine whether the program had any impact on participants.

But even with such a basic data-gathering design it may be possible to secure meaningful program evaluation data. Suppose, for example, that a health education program is promoting a knowledge outcome so advanced that most individuals would not be familiar with its content. In such a setting one could assume that any post-program knowledge is attributable to the program's impact, because participants would probably not know the information without the program. It might not be worth the resources necessary to demonstrate conclusively that participants began the program unfamiliar with the outcome's content.

This example illustrates the chief mission of data-gathering designs, namely, to rule out plausible rival hypotheses, other than the program's impact, that might account for the post-program status of participants. If there is reason to believe that participants' pre-program status may account for their post-program status, then a data-gathering design should be selected which permits the evaluator to rule out that rival hypothesis.

Now suppose that, in order to avoid the major shortcoming of the previous design, we measure participants' behavior both before and after a health education program. We could represent that design as follows:

MEASUREMENT → PROGRAM → MEASUREMENT

Let's assume that the result was a substantial shift toward more desirable behaviors between the initial and the final measurement. Could this change in behaviors be ascribed to the program? We cannot be sure. There are many other factors that may have led to the observed change in behaviors. For example, there may have been a significant event, an event totally unrelated to the program, which influenced participants' behaviors. If the program were designed for children, they may have matured during the time of the program. Thus it may have been increased maturity rather than the program which caused the altered behaviors. The program itself may have contributed nothing to the shift of behaviors. Such threats to the evaluation's internal validity decrease our ability to draw defensible conclusions about the program's impact.

But, as was true with the earlier design, if there are no plausible rival hypotheses for explaining posttest results, the design is sufficient for the task at hand. In fact, many formative evaluations feature such simple yet serviceable pretest-posttest designs involving only one group of participants.*

**Note that this design requires measurement before as well as after a program. This points to a commonly accepted but often overlooked principle of effective evaluation. Evaluation is most effective when it is initiated at the beginning of a program, often prior to the program's formal inception. If evaluators are not called in until the end of a program, they sometimes serve as little more than test proctors.*

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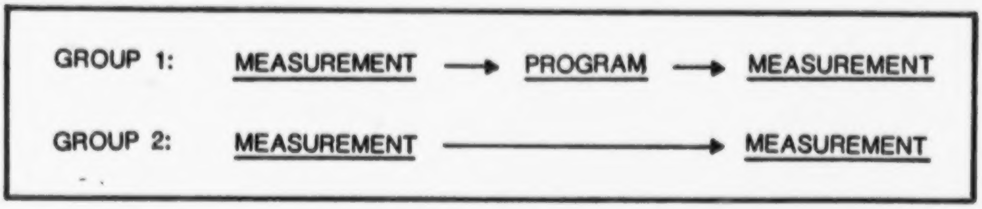
We can eliminate some of the more common rival explanatory hypotheses by using data-gathering designs in which we employ comparison or control groups. The use of a control group (untreated individuals) or comparison group (individuals receiving a different program) requires two groups assumed to be equivalent before the program on all related variables. Only one of the groups is given the target program. This can be illustrated as follows:



In this design, as we see, a control group (Group 2) is assessed before and after the program, but never receives the program itself. Assuming that the groups were comparable before the program, if the program participants' pre-to-post behaviors change, and the control group's pre-to-post behaviors remain the same, we can be more confident that the program caused the change.

There are, however, some disadvantages to this design. It may be that the initial measurement was reactive. A reactive measurement is one which by itself, or in combination with the program, influences participants' behavior. Attitude inventories and self-report questionnaires about behavioral practices are often reactive. For example, a questionnaire administered before the program might alert participants to a desired behavior, hence influence their performance on the second measurement. Furthermore, measurement is expensive, and measuring control groups can waste valuable evaluation resources. Time and money can often be better spent in order to study the program being evaluated rather than to study a no-treatment control group of little interest. (The merits of comparative designs will be described later.) Health educators should not ritualistically employ control groups in their designs if the questions at issue can be answered without their use.

There are situations in which health educators may wish to appraise the effects of their programs on the basis of periodic measurements, such as routinely administered questionnaires or the kinds of archival data one often finds recorded in health agencies. For instance, suppose we were evaluating a "parent health awareness" program and were interested in the number of checkups parents sought for their children. Assuming that such information were available from physicians in a county's health department, the evaluator might use a time-series design. In a time-series design we measure at periodic intervals both before and after the program. By observing the pattern of measurements prior to and following the program we can discover if the program had any effect.

To clarify, Figure 1.1 presents three illustrative time-series data patterns of six periodic measurements (M_1 through M_6) taken every two months over a 10-month period. A six-week-long health education program is offered midway in the time series, that is, immediately following Measurement

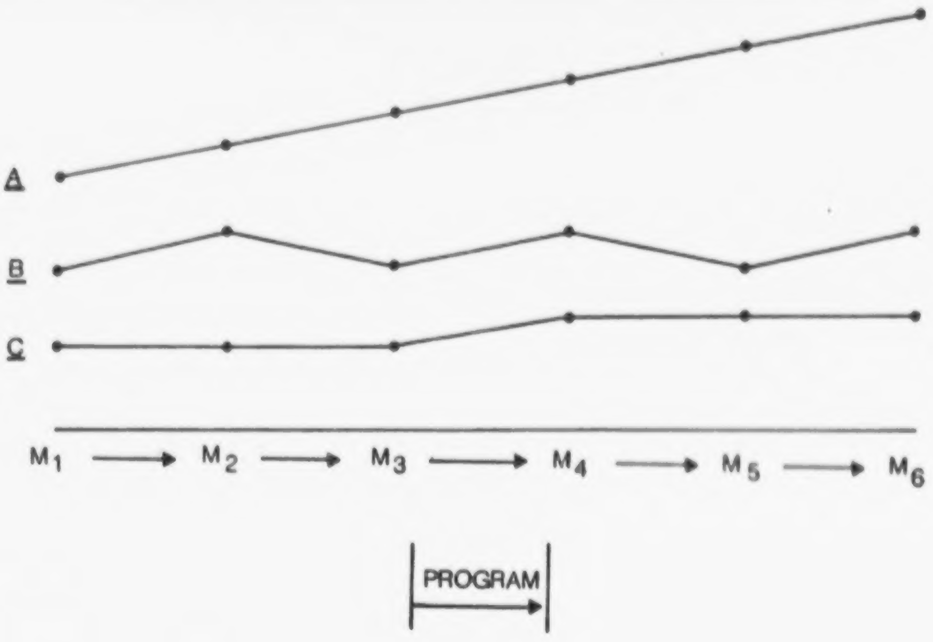


FIGURE 1.1 THREE DATA PATTERNS FROM A TIME-SERIES DESIGN

Number Three (M_3) and just before Measurement Number Four (M_4). Note that the difference between M_3 and M_4 (that is, immediately before and after the program) is identical in all three data patterns. Yet in data patterns A and B we would be reluctant to attribute the M_3 to M_4 growth to the program's effects. In pattern A there are consistent increments over the entire 10-month period, not just the period associated with the program. In pattern B the increments and decrements fluctuate too much. Only in data pattern C could we make the attribution of program effects with some confidence. Although the data analysis procedures associated with time-series designs are fairly complicated, it is often possible to discern program effects merely from inspections of patterns in plotted data such as those shown in Figure 1.1.

In using time-series designs to evaluate programs, health educators must be particularly attentive to the possible impact of an event, external to the program, that may have influenced the observed data patterns. For instance, referring back to Figure 1.1, suppose that a widely publicized national outbreak of influenza had occurred at the same time as the "parent health awareness" program. Suppose also that parents were being urged by the media to seek checkups for their children. Then the growth pattern observed in pattern C might be more associated with that event's effects than with the health education program's effects. This is another illustration of a threat to a study's internal validity.

A time-series design, though often used with archival data, can be employed with any sort of periodically gathered data such as routinely administered attitude inventories. A time-series design can be used to evaluate one program at a time or to evaluate several programs simultaneously. For example, suppose the three data patterns seen in Figure 1.1 were data associated with simultaneously offered programs. In this instance, the program yielding data pattern C would be the only one resulting in detectable effects.

Evaluators using time-series designs should be certain to have a reasonable number of measurement opportunities over an extended time period. Such a design should not be employed unless there are enough data points so that clear data patterns are detectable.

RANDOMIZATION. In the designs we have discussed thus far, the focus has been on evaluating one program with one group of participants. This may be the situation for many health educators who are only interested in considering the specific program they are providing. But suppose, as we described earlier, you are interested in the general effectiveness of a program which will serve as a model to be implemented in a variety of settings, with different types of participants. How would you design such a study?

One technique that can prove useful in such settings is randomization. We select or assign things randomly when we do so in a nonsystematic manner, such as by using a table of random numbers (found in most statistics texts). One application of randomization is randomized selection of subjects. This sort of randomization is particularly important when we wish to generalize from the results of a study to a larger population. When the participants taking part in the program to be evaluated have been selected at random from a larger population of potential participants, then we can be reasonably confident that those involved in the evaluation will be representative of that larger population. There is less likelihood that the participants being studied in the evaluation are atypical, making it inappropriate to generalize the evaluation's results to the population at large. Randomized selection of subjects may also be useful when there are more applicants than vacancies for a program or when not all potential clients can be served.

Another use of randomization arises when we determine which of several programs individuals are to receive. If we want to compare the effects of different programs, then we want participants in each program to be as equivalent as possible. To this end, we can employ a randomized assignment procedure whereby we randomly place individuals in the programs to be compared.

The two procedures of randomized selection and randomized assignment are illustrated in Figure 1.2 on the next page. Note that we randomly select participants from the pool of potential participants, then randomly assign those individuals selected to either Program A or Program B.

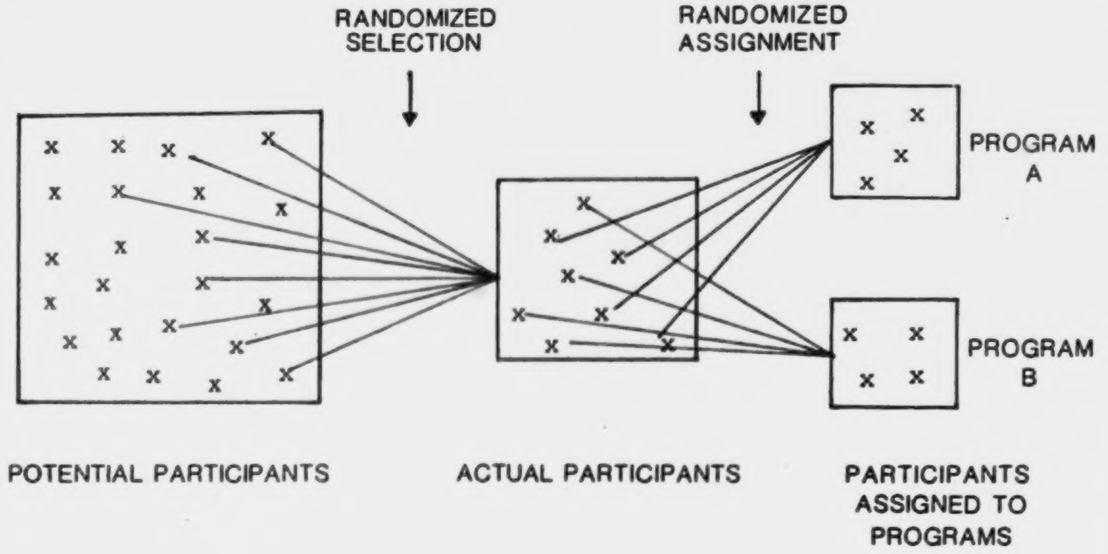


FIGURE 1.2 RANDOMIZED SELECTION OF PARTICIPANTS FROM POOL OF POTENTIAL PARTICIPANTS AND RANDOMIZED ASSIGNMENT OF PARTICIPANTS TO PROGRAMS

Use of randomization techniques does not necessarily create equivalent groups. For example, if we were to randomly distribute 100 potential participants in a health education program into a treatment and a no-treatment group, it is still possible that one of the groups would end up with individuals who, when pretested, turn out to be significantly different in relation to characteristics of interest than those in the other group. In such instances evaluators must rely on statistical procedures in an effort to compensate for such disparities. In most instances, however, use of randomization will create groups of sufficient equivalence that such statistical adjustments are not needed.

In practice, program personnel often may not have the luxury of constituting groups via randomized selection or assignment. There are, in fact, situations where program personnel would not want to use such procedures. When randomization is not used, it is especially important to collect and examine descriptive data carefully, to determine where preexisting differences occur and to consider the ways in which they may influence outcome data. Even if randomization is impossible, attempts to constitute comparison groups with individuals as equivalent as possible can help minimize the influence of preexisting participant differences.*

COMPARATIVE DESIGNS. Comparative designs offer another approach to collecting meaningful data. Comparative designs arise because of the basic function of evaluators, namely, to aid decision-makers. Decision-makers ordinarily make selections among alternative courses of action. Ideally, if a decision-maker is choosing between several options, the evaluator should supply evidence as to the merits of each one. For this reason, it is often less sensible to include an untreated control group in an evaluation than to include comparison groups representing the various options under consideration.

For example, suppose that a program developer for a health education project were choosing between lectures and independent study as two ways of presenting program content. If possible, the evaluator would consult the research literature regarding the probable virtues of each option. Thereafter, a study could be designed in which variations of both strategies were tried out for a reasonable period of time in order to compare the relative effectiveness of each one. In this situation there would be little reason to employ an untreated control group, because it is unlikely that a no-treatment option would be chosen by the program staff.

In summary, the data-gathering designs treated in this chapter have been relatively simple. There are a number of far more complex designs than we have considered. Although program evaluators sometimes become so entranced with complicated data-gathering designs that they apply them whenever carrying out an evaluation study, evaluations often do not need complex designs. In fact, such designs should be adopted only when needed to eradicate threats to internal or external validity.

There are many instances in program evaluation when simple data-gathering designs are sufficient. The utility of simple designs is particularly apparent in formative studies when evaluators are looking for rapid-turnaround

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**For additional information about randomization, see Annotated References Nos. 6 and 19.*

data to guide program personnel in making upcoming program decisions. In such settings the evaluator needs to assemble timely decision-relevant information. The use of complex data-gathering designs in such circumstances often represents a squandering of evaluation resources and program time.

Program evaluators also are often so concerned about detecting the effects of programs that they fail to consider the costs needed for the programs to produce those effects. Yet decision-makers need guidance regarding not only the results they can expect from a program, but also the financial resources required to achieve those results. For this reason program evaluators should consider the relative costs of programs. To illustrate, how much does it cost Program A to produce a given result in relation to Program B's costs to produce comparable results? Judgments about a program's impact in the absence of considerations about its costs are potentially superficial.*

SELECTING APPROPRIATE MEASURES

Although there are various approaches to program evaluation, almost all share one common feature, namely, the acquisition of systematic evidence regarding a program's effects. To secure evidence of program effects, we usually employ measurement instruments. But some instruments are far more suitable for assessing a program's effects than others.

CRITERION-REFERENCED MEASUREMENT. For more than a decade, educational measurement specialists have directed their attention toward an emerging form of assessment known as criterion-referenced measurement. In comparison to norm-referenced measurement, which attempts to ascertain examinees' status in relation to other examinees, criterion-referenced measurement attempts to ascertain examinees' status in relation to a clearly defined set of behaviors. In fact, it is because the status of examinees can be interpreted according to a clearly defined domain of criterion behaviors that we say a measure is "referenced" to those criterion behaviors, hence classified as a criterion-referenced measure. It is important to recognize that the word "criterion," as it is used in the phrase "criterion-referenced measurement," does not refer to a level of examinee perform-

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**For additional information about various evaluation design options, see Annotated References Nos. 6, 10, and 17.*

ance. The level of performance we expect from examinees is a separate issue.

The essence of a criterion-referenced instrument is the clarity with which its accompanying descriptive materials explain that which is being measured. Because norm-referenced instruments emphasize relative comparisons among examinees, they often do not need to provide a clear description of exactly what it is they are assessing. In contrast, criterion-referenced instruments are absolute measures, designed to determine exactly what it is that examinees can or cannot do without reference to the performance of other examinees. Thus, criterion-referenced tests must provide an unequivocal description of what they are measuring.

It is this clarity regarding the attributes being assessed that renders criterion-referenced measures ideal for program evaluation. Consistent with the spirit of providing useful information for decision-makers, criterion-referenced instruments describe the precise nature of what is being measured. Hence, when criterion-referenced measures are used in a program evaluation, decision-makers can readily interpret the evidence being supplied.

The best way to determine what a particular criterion-referenced instrument measures is by reading the test specifications that are used to create the items on that measure. Test specifications identify the particular rules and content used in constructing a measure and in so doing operationalize the attributes being assessed.

As with any assessment strategy, there are varying degrees of quality in criterion-referenced measures. Not every instrument described as "criterion-referenced" truly deserves that label. Evaluators of health education programs, therefore, should become knowledgeable regarding the characteristics of high quality criterion-referenced measures. Several of those characteristics are described in the sections that follow.

The single most important element of a properly constructed criterion-referenced instrument is that it adequately describes the attributes it claims to measure. Such clarified descriptions, contained in the test specifications, may take a variety of forms. Irrespective of the particular form employed, in reading the descriptive information associated with a criterion-referenced instrument, it must be possible to discern unambiguously what is being measured. The test specifications contained in Chapter Seven provide an example of the level of descriptive rigor required by criterion-referenced tests.

Historically, many measures have attempted to cover vast arrays of content. The net effect of this broad coverage has often been that those attempting to use the results from such instruments become overwhelmed by the number of different attributes being assessed. A properly constructed criterion-referenced instrument will focus on a manageable number of dimensions. As a consequence, program personnel can direct their efforts toward those dimensions. Evaluators can describe program effects along those dimensions. A criterion-referenced instrument that attempts to measure 10 or 20 different outcomes, for example, would likely prove less useful to program personnel and evaluators than an instrument that measures only one significant attribute. In some instances, particularly for diagnostic purposes, it may be helpful to design an instrument that assesses the major subdimensions of a more general attribute. Even in such cases, however, the guiding rule should be to employ only a manageable number of categories.

In order for a measure to yield suitable information about examinees' status regarding a given attribute, it is often useful to provide multiple instances for examinees to display that attribute. Hence, criterion-referenced measures should provide a reasonable number of test items for each attribute measured. It is rarely sufficient to measure other than behavioral attributes with only one or two test items. In some cases, a handful of test items per measured attribute or its subdimensions can aid the evaluator in gaining rough estimates of certain program effects. But, generally speaking, at least five to ten items per attribute constitute a minimum for measuring most significant health outcomes.*

RELIABILITY. All instruments used for evaluation must measure what they are measuring with consistency. The consistency with which an instrument measures is known as its reliability. To illustrate, suppose a 30-question knowledge test is administered on a given day, then re-administered to the same examinees five days later with no intervening instruction. If the test is reliable, examinees should receive essentially the same scores on both testing occasions. If the test, when re-administered, yields substantially different examinee scores, we know that the test is not measuring with consistency, thus, is unreliable.

There are several different indices which can be computed to reflect an instrument's reliability (for example, test-retest or equivalent-forms reliability coefficients).

**For additional information about the nature and development of criterion-referenced measures, see Annotated References Nos. 4, 18, and 27.*

The kind of reliability data needed to appraise a measure for possible use in an evaluation study should be consistent with the way the measure will be used in that study. If a measure is to be used on a test-retest basis, for example, then information about that type of reliability is germane.

Reliability coefficients generally range from 0 to 1.0, with coefficients of .80 or higher indicating highly reliable measures. Although space limitations preclude a more complete discussion of reliability, evaluators should become conversant with this key attribute of properly constructed tests. At this point, it must suffice to alert program evaluators to the importance of securing evidence regarding the reliability of any measure used in an evaluation.*

VALIDITY. A critical attribute of a properly constructed measure is that it be valid. An instrument is valid if it measures what it purports to measure. To illustrate, in the health field we often use self-report measures as a way of finding out about individuals' "real life" behaviors. If our self-report inventories are valid, then those measures will secure responses that are accurate indicators of the way respondents actually behave. To the extent that responses on the self-report measures do not coincide with respondents' actual behaviors, then the measures are invalid.

There are several varieties of validity studies, each yielding somewhat different but conceptually related evidence about a measure. For example, a need for one type of validity arises when we want to use self-report measures as proxies for physiologic measures. In order to establish this type of validity, we use self-report questionnaires to elicit an account of participants' health behaviors, then attempt to correlate the questionnaire responses with the results of physiologic tests that reveal something about people's actual behavior. If the questionnaire data do, in fact, correlate substantially with the physiologic measures, then the questionnaire is, at least to some extent, validated.

Another type of validity must be demonstrated when we want to use measures as predictors of some subsequent criterion behavior, such as when we hope that responses to an affective inventory gauging individuals' intentions to engage in particular health behaviors will actually predict those later behaviors. If the affective measure does, in

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**For additional information about determining the reliability of measuring instruments, see Annotated References Nos. 2, 15, and 27.*

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fact, correlate substantially with subsequent observations of the health behavior, then evidence of the measure's validity has been obtained.*

ABSENCE OF BIAS. In the past decade we have become aware of the distressing truth that many educational assessment devices contain items which are biased against particular subgroups such as ethnic minorities or women. An example of a biased test item would be a knowledge question which, because of peculiarities in its content or wording, is harder for lower-income examinees to understand and answer correctly. Test items that use content and terminology apt to be known only by the affluent would certainly be biased against the less economically advantaged.

Another type of bias that can adversely influence examinees' performances arises when test items are offensive to particular groups of individuals. For example, if test items include content that is seen to be derisive to women or to members of particular ethnic groups, then examinees from those groups are not apt to perform at their best on such items. Their agitation over the offensive content may interfere with their responses to the items.

In a sense, of course, bias is present in measuring instruments whenever a particular group of individuals is disadvantaged or advantaged by the test. If, for example, poor Black Americans are disadvantaged by a particular test, then it is likely that affluent White Americans are advantaged by that same test. Test developers must be sure that their instruments do not unfairly advantage any (or all) of the individuals to whom they are administered.

A properly developed measure should include no biased items. There are now available both judgmental and empirical techniques for detecting the presence of such items. These approaches should be used to determine the degree of bias in a measure's items.**

In reviewing the various dimensions of properly constructed measures, it is important to note that any given instrument may not possess all these qualities. Often one must choose among measures that embody some but not all desired elements. The important point is that merely because a measure is labeled in a particular way, for example, as criterion-referenced or as non-biased, does not indicate that it is of sufficient quality to be used with satisfaction in evaluating a health education program. Further scrutiny of all aspects of the measure's quality is mandatory.

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* *For additional information about determining the validity of measuring instruments, see Annotated References Nos. 2, 15, and 27.*

***For additional information about methods for avoiding test bias, see Annotated References Nos. 5 and 25.*

SAMPLING CONSIDERATIONS FOR DATA COLLECTION

If evaluators are not attentive, the data-gathering requirements of evaluation can become a burdensome intrusion into ongoing programs. Accordingly, evaluators should restrict their data-gathering forays to the least intrusive form possible. One way to minimize an evaluation's intrusiveness is through sampling techniques.

PERSON-SAMPLING. To estimate how a large group of people would respond on a particular measure, it is not necessary to administer that instrument to all the individuals in the group. Instead, we can sample individuals from the group by selecting either a simple random sample or a random sample stratified on the basis of program-relevant factors such as age, sex, and socioeconomic status. Assuming that the sample is correctly drawn, we can estimate the status of the total group based on the responses of this sample.

In the type of sampling described above, we select representative samples of people to represent a larger population. Suppose, for example, that we want to use a measure to determine program effects. Assuming a reasonably large number of program participants, say 50 or so, we could randomly select half of the participants and administer the measure to this group only. In essence, this approach allows us to infer how the total group of participants would score on the measure although only half of the participants completed it. We could thus estimate how the total group of participants would have responded, yet halve the amount of participant time required for data-gathering.

In a similar sampling procedure, we could administer two or more measures at once. Suppose that two measures, Inventory X and Inventory Y, are to be given to program participants. We can randomly assign one half of the participants to one measure and one half to the other. While each participant needs to respond to one measure only, we can still derive a defensible estimate of how all the participants would have responded to both instruments.

ITEM SAMPLING. In addition to sampling persons, as in the previous examples, it is also possible to sample items so that different sets of items from a program evaluation measure are randomly selected to be administered to different persons.* In such an approach we give each participant only a sample of the items for which we want to obtain evaluation data. For example, suppose a program evaluator wishes to administer a 40-item test. Given, say, 60 participants in the program, the evaluator could divide the test into four sets of 10 items each and administer each set of 10 items to 15 participants. By having the four groups of 15 participants each complete a different set of 10 items, the total group's performance can be estimated. This approach allows the data-gathering to be carried out in one-fourth the time that it would have taken to administer the total 40-item test to all participants.

SAMPLE SIZE. Given the relatively small numbers of participants in some health education programs, is it really appropriate to sample either persons or items? How large must groups be before sampling procedures can be sensibly used? Although an unequivocal answer to this question would be desirable, such a definitive answer does not exist. Some texts on sampling do provide rules of thumb for estimating the size of samples needed for detecting group differences in relation to the magnitude of differences sought and the nature of the groups being sampled. At best though, these are rough estimates. It is important to recognize that the task of identifying a sufficiently large sample is more difficult than usually thought.

Intuitively, we may recognize that when we start with a very small group of program participants, the use of sampling is risky. For instance, if there were only 15 participants in a program, few health educators would try to split

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**A *measure*, such as the measures found in this handbook, generally consists of a group of *items*, such as questions on a test or statements on an attitude inventory.*

these participants into three groups of five each for purposes of taking different tests. Even though each group represents one-third of the total population, there is too much likelihood that a sample of five individuals does not properly represent the total group.

The variability of participants' anticipated performance on the measures is the primary influence on the sample size necessary. The following example illustrates the effect of population variability on sample size. If a man's socks were all stored in a drawer, yet there were only black and brown pairs, he wouldn't need to draw out too many pairs until he had a reasonably good idea of the characteristics of the total population of socks in his drawer. But suppose he had socks in 10 different colors. Then he would most likely have to take out many more pairs until he could reach an accurate estimate of the colors of socks in the drawer. In much the same way, if it is expected that participants' scores on a test will be relatively homogenous, a smaller number of respondents will be needed than if participants' scores are expected to vary widely.

By employing any of these sampling procedures, an evaluator is focusing on a group of participants in the aggregate. Because evaluations are typically concerned with the effects of programs on groups of participants, sampling procedures are usually appropriate. If, however, program personnel need individual data on all examinees on all measures, then sampling is not appropriate.*

WHEN TO ADMINISTER MEASURES

Decisions regarding when to administer measures depend on the data-gathering design selected. Conceivably, there are five temporal periods during which it may be useful to obtain information on participants, and there may also be reasons for repeated measurement during some of these periods. These periods are depicted in Figure 1.3 on the next page.

**For additional information about sampling procedures, see Annotated References Nos. 7 and 8.*

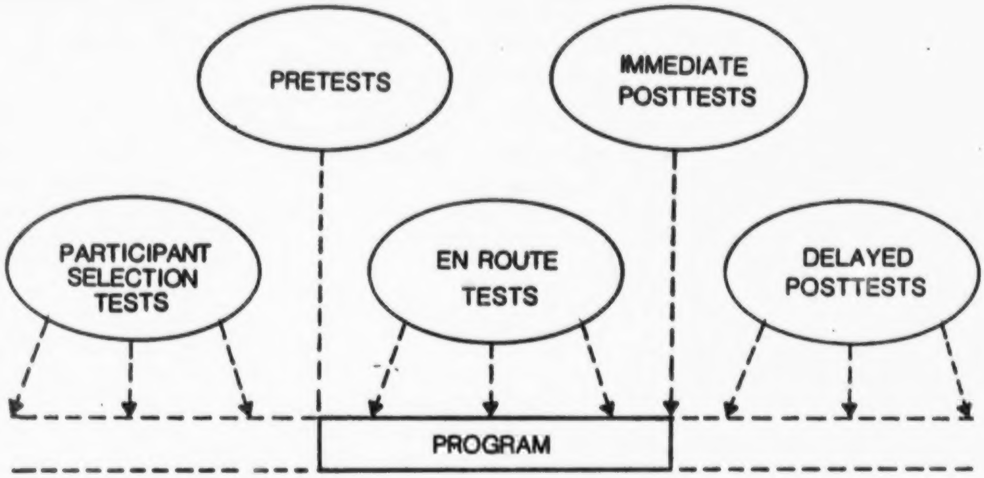

FIGURE 1.3 POSSIBLE MEASUREMENT TIMES IN PROGRAM EVALUATION STUDIES

PARTICIPANT SELECTION TESTS. The first time in a program that it might be useful to obtain information would be prior to the selection of participants. Some programs may have more applicants than program openings. Perhaps there are multiple variations of a program, and different participants are to be assigned to different variations. In such cases it may be useful to have information to help in participant selection. One may want to select those individuals most in need of the program, or those with the most (or least) perceived ability to attain the behavioral change sought in the program. In any event, information at this juncture may help the selection process become more effective than it might otherwise be.

PRETESTS. Often it is useful to have information about participants immediately prior to their starting the program. Such information, often referred to as pretest data, may be used to identify participant weaknesses so that instruction can be targeted directly to those areas rather than emphasizing things that participants already know. Such data may also be used as a baseline, in conjunction with data collected at the end of a program, to determine the impact of the program. If participant data have already been collected at the selection stage, it might be unnecessary to re-administer measures unless it has been a long time since the initial administration, or unless there are reasons to expect a change in participants' performance.

EN ROUTE TESTS. Measures can also be administered during a program to secure a current reading on the status of participants. Such en route data can then be used to redirect program resources during the program itself. One or more en route measurements can provide program personnel with ongoing status-checks on participants' progress. Such measurement may be even more useful than tests administered at the end of a program, for it provides information while there is still time to act on it.

POSTTESTS. Measures can be administered directly following a program. The posttest data they yield may be compared to pretest data in order to provide an estimate of the changes in participants as a result of the program. Participants' posttest performances can also be contrasted with scores from participants in other programs. Posttest data may also be used by themselves as a measure of the absolute status of participants.

Data from delayed or follow-up posttests (for example, tests administered one year after a program's conclusion) are often equally if not more important than immediate posttest data in evaluating a program. Far too frequently, data collection efforts are limited to those times when measurement is most convenient. Ultimately, however, health educators may be more interested in effecting long-term behavioral, affective, and cognitive changes. It is sometimes difficult to infer such long-term changes on the basis of information gathered solely at the end of a program. Hence, some follow-up measurement, perhaps repeated, is usually warranted.

Clearly, it is not sensible to administer all measures at all time periods. Evaluators, in collaboration with program personnel and other interested parties, need to select an evaluation design that focuses on the most appropriate times for gathering data. Just as it is desirable to avoid administering an overwhelming number of different measures, it is also necessary to avoid an overwhelming number of administrations. It may be useful to administer certain measures (for example, a behavioral measure) on a continuing basis, while others might be administered far less frequently. Decisions about when to administer measures should be guided by common sense, attentiveness to participants' rights and feelings, the efficient use of resources, and any conventional expectations such as when a delayed posttest is ordinarily given.

DATA ANALYSIS

A frequent question asked of an evaluator is whether a study's results are statistically significant. Could a program's observed effects have occurred merely because of the particular sample used in the study? Are the differences so small that they might have occurred simply by chance? Statistical tests are used to answer these questions. In order to do so, these tests make certain assumptions about the data being analyzed.

LEVELS OF MEASUREMENT. To illustrate the kinds of assumptions that statisticians make about the data they analyze, we can consider levels of measurement scales. Statisticians draw distinctions among various levels of measurement, that is, nominal, ordinal, interval, and ratio scales. Nominal scales classify information into categories without any implied order. For instance, when we categorize individuals as males or females, we are using a nominal scale. An ordinal scale ranks information in a particular order, such as when we might rank a number of individuals according to their overall healthiness. An interval scale is one which assumes that there are equal intervals between points on a scale. To illustrate, the 10-point difference between scores of 43 and 53 on a 100-item test would be considered identical to the 10-point difference between scores of 67 and 77. A ratio scale is an interval scale for which a zero point exists, such as a weight or height scale, where there is a true zero.

When we select statistical techniques, it is important to match those techniques to the type of data being analyzed. For example, in analyzing nominal data one must use statistical techniques specifically designed for such situations. Chi square, for instance, is one of several frequently employed nonparametric techniques used for analyzing nominal data. Other nonparametric techniques are used to analyze ordinal data. A chi square test can be used to compare the actual frequencies in two or more nominal categories with the frequencies which might be expected by mere chance. Chi square, however, would not be a wise choice for analysis of ordinal or interval data because nonparametric tests often fail to use all of the available information, hence are frequently less powerful than more appropriate alternatives. Thus, one must be certain that the assumptions associated with particular statistical techniques have been satisfied.

The statistical procedures to be discussed below are ones that are used primarily with interval and ratio data, that is, data from scales with equal intervals between points. Such procedures are known as parametric tests. Cognitive tests are almost always assumed to be interval scales. Affective scales, although not necessary interval scales, are also often analyzed using parametric procedures, under the dual assumptions that the points on the scale reflect equal increments of a characteristic and that data analyses are only slightly distorted if this first assumption is violated. Thus, knowledge, skill, and affective measures are frequently analyzed using the following procedures.

BASIC STATISTICAL PROCEDURES. One of the most basic parametric procedures used is a *t* test. A *t* test assesses the significance of the difference between two independent means. (Recall that a mean is the arithmetic average of a group of scores, computed by summing all the scores in a group, then dividing this total by the number of scores in the group.) Suppose, for example, that an evaluation were conducted to compare the effectiveness of two health education programs, and that a knowledge measure were administered to a sample of participants at the conclusion of each program. A *t* test could be used to compare the mean posttest scores of those two programs to determine if observed differences were statistically significant. If three or more programs were compared in this way, an analysis of variance (ANOVA) would be used.

Two other techniques, gain scores and analysis of covariance (ANCOVA), are frequently used (and, unfortunately, frequently misused) when both pre-program and posttest data are available for participants in one or more programs. Both techniques use pre-program information in an attempt to compensate for initial group differences between participants in different programs. So, for example, if an evaluator were interested in determining the degree of attitudinal or cognitive change in participants as a result of a program, the evaluator might compute a gain score (posttest score minus pretest score) as a measure of change. However, dangers associated with the use of gain scores are well documented, and such scores should not be used without considering the ways in which they may be misleading.

ANCOVA is frequently used when an evaluator wishes to compare the mean differences between two or more programs on a posttest measure (as in ANOVA), but recognizes that there may have been preexisting differences among the groups, as identified by a difference in mean pretest scores or in demographics among groups. ANCOVA compares posttest means after adjusting the posttest scores for these preexisting differences. Unfortunately, however, if these differences are systematic and not a function of random differences among groups, ANCOVA does not provide an adequate method for equating the groups. Hence, evaluators and program personnel need to use caution when conducting such an analysis or interpreting results from it.*

As an evaluator becomes more conversant with the purposes sought by various statistical analysis procedures, it is possible to consider those purposes in relation to the levels of measurement (e.g., ordinal) required of each procedure. Many statistics texts have already done this and provide easily used tables that indicate, for a given level of measurement, the statistical technique that should be used for a particular analytic purpose. To illustrate, if an evaluator wanted to analyze nominal data to see if there were differences between groups, then such a table would indicate that a chi square analysis was appropriate. Program evaluators who carry out frequent data analyses will find such purpose-by-measurement-level tables to be helpful guides.

Another choice-point faced in the analysis of data concerns the appropriate unit of analysis, that is, the level at which data can defensibly be analyzed. Most people are familiar with analysis procedures in which the individual participant is the unit of analysis. Yet, there are instances

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******There are numerous computer packages and programmable calculators that conduct statistical procedures for users. Evaluators will make their data analysis efforts easier and more efficient if they anticipate the likely procedures and facilities to be used for analyzing their data, then collect data in the manner most compatible with their analysis plan and the available computer software.*

in which the unit of analysis should not be the individual participant but, rather, a group of participants. The guiding principle in selecting an appropriate unit of analysis is that one should choose the smallest independent unit to analyze. To illustrate, suppose a health education program involved the use of peer-support discussion groups of 10-12 people each in order to encourage adoption of a given health-related behavior. The individuals in each group would surely interact during discussions, hence not be independent. Therefore, it would not be appropriate to use the individual participant as the unit of analysis. Rather, each group's average score should be taken as the unit to be analyzed, because the group would be the smallest independent unit capable of being analyzed.

In conclusion, statistical tests only help us detect statistical significance; they do not help us determine whether an observed difference has practical significance. A small difference between the average scores of two groups can be statistically significant, particularly when large numbers of participants are involved, yet be of no practical consequence whatever. Health educators will need to make sensible determinations regarding whether the magnitude of an observed difference, even though statistically significant, is sufficiently important to warrant action. In other words, although evaluators of health education programs should often carry out statistical significance tests, they should not be unduly swayed by the results of such analyses. Common sense must always be applied in interpreting the meaning of a statistically significant result.*

REPORTING RESULTS

Reporting the results of an evaluation study is a more difficult undertaking than is usually recognized. Evaluators must report their results to decision-makers in a timely fashion. It does no good to receive an evaluation report three weeks after key program decisions had to be made. Evaluators must also be careful to disseminate their studies to all appropriate audiences. If possible, an evaluator should circulate the preliminary draft of a program evaluation report to program personnel so that they can react to its accuracy and objectivity.

For additional information about data analysis, see Annotated References Nos. 13, 19, 28, 33, and 35.

The decision-makers whom evaluators are assisting may have little experience with quantitative data. As a consequence, complicated statistical presentations may be of little value to them. Evaluators should select data-presentation procedures that will match the technical sophistication of the decision-makers involved.

In any evaluation report, there is nothing wrong with simple graphs or "percentage correct" tables. If Program _Z_ participants outperformed Program _Q_ participants by 15 percent, then a bar graph representing that difference is a readily understood technique for communicating Program _Z_ participants' advantage. (In the creation of such graphic presentations, be certain that the form of the graph accurately represents the data being depicted.) The more intuitively comprehensible the data presentation techniques, the better. Program evaluators should provide straightforward presentations of data, without fearing that such approaches will be regarded as too elementary. Adequate technical backup can be appended elsewhere.

Evaluators should not be reluctant to make speculations based upon their hunches about a program, so long as these conjectures are identified as such. Similarly, if any of the evaluation's findings are equivocal, then the evaluator should advise concerned audiences of this. Honesty and objectivity are the hallmarks of effective evaluation reporting. In addition, because decision-makers are typically busy, evaluators should strive for reasonable brevity in their reports. The preparation of executive summaries to accompany lengthy reports is a useful practice.

The whole thrust of the evaluation enterprise is to sharpen the decisions that are made. Decision-making will _not_ be illuminated by incomprehensible presentations. The quality of decision-making can be enhanced only if an evaluation's results are reported in a way that can be clearly understood.*

LINKING MEASUREMENT AND PROGRAM DESIGN

As was explained earlier, criterion-referenced measures can be particularly useful in health education evaluations

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**For additional information about reporting the results of an evaluation, see Annotated References Nos. 21 and 26.*

because their test specifications provide clear descriptions of what is being assessed. Those descriptions can also be particularly useful to program designers and program evaluators who attempt to create programs that focus on promoting certain attributes. To illustrate, one powerful instructional principle for promoting skills involves providing learners with adequate "time-on-task." By giving individuals sufficient time-on-task, that is, sufficient opportunity to practice the skills sought, as those skills are described in the test's specifications, learners can more readily attain those skills. The more clearly the skills being measured are explicated, the easier it is for program designers to organize instruction that is congruent with those skills and, thus, the greater the likelihood that program participants will acquire those skills. A health education program's designers should become intimately familiar with an intended measure's test specifications before they complete the design of their program. Clearly described measures can become powerful catalysts to effective program design.

Ideally, the measures used to evaluate a program will have been deliberately constructed so that they not only assess important outcomes, but also so that they assess them in such a way that those outcomes can be promoted more effectively. Part of the challenge in evaluating health education programs is to select criterion-referenced measures which are not merely end-of-program gauges of effects. Instead, measures should be selected which function proactively to guide program designers and program evaluators as they attempt to improve the program's quality.

CHAPTER TWO

A DESCRIPTION OF THE HANDBOOK'S MEASURES

This handbook contains a number of program evaluation measures. These are measuring instruments which may be employed in the evaluation of smoking health education programs. Many of these measures have been specifically developed for this project, while others have been selected from existing measures because of their correspondence with the handbook's outcomes. For the newly developed measuring instruments, one form of a measure is typically provided for use with adults and older adolescents. Where appropriate, a simplified version of that measure designed for elementary grade children is also provided. The reader is once more reminded that the technical adequacy, that is, the reliability and validity, of the newly developed measures has not yet been established. In this chapter the nature of the handbook's measures is briefly described. Several types of measurement strategies not included in the handbook are also discussed.

There are numerous ways of classifying measuring devices. Sometimes, for example, tests are distinguished according to the way in which an examinee's responses are scored. To illustrate, we often refer to multiple-choice or true-false tests as objectively scored measures. We refer to essay examinations as subjectively scored tests.

Measuring devices, however, can also be categorized according to the type of examinee behavior that they are designed to elicit. One of the most commonly employed schemes for classifying measures is the three-category division of cognitive, affective, and psychomotor behaviors. A cognitive measure focuses on an examinee's intellectual behaviors. An affective measure deals with attitudes, interests, and predispositions. A psychomotor measure gauges proficiency in performing small or large muscle skills.

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NEWLY DEVELOPED MEASURES

The classification system used to develop and categorize the measures contained in this handbook is based upon four categories of outcomes considered of interest to health educators. These four categories are (1) behaviors, (2) knowledge, (3) skills, and (4) affect. It is generally held that individuals' behaviors are influenced by their knowledge, skills, and affective dispositions. Consonant with that view, when the expert panelists suggested outcomes for which measures were to be included in the handbook, they first identified potential behavioral outcomes, then attempted to isolate the knowledge, skill, and affective outcomes that would contribute to each one. Let's look more closely now at each of the four types of measures included in this handbook.

BEHAVIORAL MEASURES. Measures for behavioral outcomes attempt to assess the typical behavior of individuals under normal circumstances, such as whether or not individuals smoke. Most health education programs strive to bring about lasting behavior changes in program participants, hence are ultimately focused on the promotion of behavioral outcomes. For example, a program designed to help smokers is less concerned with participants' end-of-program scores on a test about the effects of smoking than with participants' actual smoking behavior well after the program has ended.

There are several commonly employed data-gathering procedures used to secure information about individuals' behaviors. We can observe peoples' actual behavior (observation), physically monitor that behavior (physiologic indicators), or ask them to tell us about that behavior (self-report).

Evaluators are sometimes intuitively drawn to the virtues of observational approaches because, after all, "if we observe a behavior of interest, then we can be certain that the behavior actually took place." But, intuition aside, there are substantial difficulties with the use of observational techniques in assessing the impact of health education programs. For one thing, it is difficult and often costly to train observers so that they observe the behavior of interest with accuracy and consistency. More importantly, however, in most health settings we are interested in human behaviors that occur at various and unpredictable times over an extended period. Often these behaviors occur in private. Not only would the cost of paying for continuous observations be staggering, but it is clearly impractical (and, possibly, unethical) to observe individuals on an around-the-clock basis.

It is possible to employ physiologic measurements in order to make inferences about the nature of some health-related behaviors. A laboratory analysis of a person's blood composition can, for instance, reveal whether that individual has been consuming alcohol. Similarly, other physiologic tests can be used to detect traces of nicotine in the body, allowing reasonable conclusions to be made about an individual's smoking behavior. In many instances the cost of using such physiologic measures may make their use prohibitive for the conduct of routine program evaluations. However, when conducting "high stakes" evaluations of major impact programs, or when it is relatively easy to administer physiologic measures, evaluators will certainly wish to consider using such measures in lieu of, or in addition to, self-report or observational techniques.

As with observational techniques and physiologic measures, there are definite problems associated with the use of self-report measures to identify individuals' behaviors. Not the least of these problems is the possibility that individuals will distort their responses so that these responses do not reflect actual behavior. Yet, on balance, the use of self-report measures often offers evaluators the best practical method of securing meaningful evidence about the actual behaviors of participants. In light of these practical considerations, therefore, the handbook's newly developed behavioral measures are all of the self-report variety. A number of recent studies suggest that self-report assessment devices can be effectively employed as supplements to physiologic measures.*

KNOWLEDGE MEASURES. Most health education programs have a great deal of factual information to transmit to participants. The evaluator's task is to employ measurement devices which can effectively assess participants' recall of this information. Most such tests consist of objectively scored paper-and-pencil measures of one sort or another.

**See, for example, Petitti, D.B., Friedman, G.D., & Kahn, W. Accuracy of information on smoking habits provided on self-administered research questionnaires. American Journal of Public Health, 1981, 711, 308-311.*

Knowledge tests typically pose questions related to a body of factual information. There is often substantial ambiguity, however, regarding the information that will be tested. Suppose, for example, that an instructor in a smoking program knows only that there will be a posttest dealing with the effects of smoking. There is no way for this instructor to anticipate the enormous variety of test items which could be written regarding smoking. To the extent that the program's quality is being judged, at least in part, by participants' performances on the posttest, the program's evaluation is at the mercy of the test writer. No one except the test writer knows for sure what is to be tested.

To counteract the difficulties arising from an unspecified body of eligible test content, all of the knowledge measures specially developed for this handbook are based directly on a series of statements that present the important factual information related to the outcome being tested. All of these statements are listed in content supplements that accompany the test specifications used to develop the test items. These content supplements, which may be of particular interest to program personnel, appear in Chapter Seven, as a part of each knowledge measure's test specifications. The test specifications also explain how these statements can be used to create test items. As a result of this careful explication of content, a program's instructional staff and its evaluator can be certain of the universe of content upon which each knowledge test is based.

All of the handbook's newly developed measures consist of binary-choice True/False items. One advantage of using this type of test item is that, as explained above, a complete list of all the content eligible for testing can be compiled. An additional advantage of this approach to the assessment of knowledge is that, if a program includes individuals with limited reading skills, the items can be read aloud to participants with little increase in the necessary testing time. Reading aloud a series of multiple-choice or matching items would be far more cumbersome.

It is sometimes feared that the results of a binary-choice test may reflect mere chance rather than what examinees actually know, simply because examinees can correctly guess answers at a 50 percent rate. Although guessing can play a major role with one or two True/False items, with longer tests the odds of guessing one's way toward success are slight indeed. For example, there is one chance in four that an examinee could correctly guess answers on two binary-choice items. To guess ten out of ten such items correctly, however, the odds shrink to less than one in 1,000. By using binary-choice tests that contain a sufficient number of items, for instance tests with 20 or more items, we substantially reduce the likelihood that guessing will so influence an examinee's test score that we will not secure a reasonable estimate of that examinee's knowledge.

Because examinees will always be able to guess some items correctly on a binary-choice test, program personnel should not become too jubilant over scores that are slightly above the 50 percent correct expected by chance alone. With reasonably long binary-choice tests, however, there usually will be more than enough variability in examinee performance to detect differences in the effectiveness of programs.

SKILL MEASURES. Program outcomes dealing with skills call for participants to apply knowledge, not merely recall it. The attributes assessed in the handbook's newly developed skill measures are all higher order cognitive skills. An individual's ability to use situational control techniques to control smoking behavior is an example of the type of skill for which the handbook provides measures.

These skill measures emphasize the use of higher order cognitive processes to make choices in a variety of simulated real-life settings. All of the choices focus on health-related courses of action that an individual might pursue. Application, not recollection, has been sought in the handbook's skill measures, requiring examinees to demonstrate skills in settings approximating those they would encounter in real life. In many instances the skill measures build directly on the knowledge measure(s) associated with related outcomes.

It should be noted that observational techniques can often be used to assess participants' mastery of cognitive or performance skills, particularly if the observations are made while the program is in progress or immediately at its conclusion when participants are still readily accessible. Observation-based skill measures, however, are not provided in the handbook.

AFFECTIVE MEASURES. Affective outcomes refer to the variety of noncognitive variables, such as attitudes, interests, and values, which are thought to predispose individuals to act in a particular manner. For example, an individual's negative attitude toward smoking is believed to incline that individual to refrain from smoking.

Although it is possible to infer the nature of an individual's affective status from observations of that person's behavior, the most common technique for assessing affect uses self-report inventories. A self-report affective inventory can be constructed to require either (1) modest inferences to interpret the scores or (2) substantial inferences to interpret the meaning of the scores. We refer to the former as low-inference self-report measures, and to the latter as high-inference self-report measures.

Low-inference self-report measures typically present respondents with a series of straightforward questions or statements, such as those asking for the degree of agreement with positive and negative statements about smoking. Responses to such measures can be readily interpreted if respondents are telling the truth. To heighten the likelihood of securing truthful responses, those completing affective measures are often directed to return them anonymously.

High-inference self-report measures are typically designed to be less apparent in what they are attempting to measure. To illustrate, if a relationship had been found between individuals' religious views and smoking, we might ask people about their religious attitudes in order to get at their attitudes regarding smoking. The virtue of high-inference measures is that, because their purpose is masked, it is difficult for respondents to provide dishonest responses or to respond in the direction deemed desirable. On the other hand, in order to interpret the results from high-inference measures, we often must make quite tenuous inferential leaps. The less obvious the purpose of the items, the less likely that individuals will respond untruthfully, but the greater the required inference.

Because of the interpretation risks associated with high-inference assessment schemes, all newly developed measures of affect in the handbook employ low-inference strategies. These self-report affective inventories sometimes rely on Likert-type scales wherein respondents register varying degrees of agreement with statements about smoking. In other instances, respondents are asked to estimate whether or not they would behave in a certain way (such as refraining from smoking), then are asked to indicate the degree of confidence which they have in each estimate.

GENERIC MEASURES. This handbook contains not only measures designed to match outcomes specifically identified by the smoking expert panel, but also several measures deemed appropriate for a variety of health education programs. These generic measures assess skill and affective outcomes of potential relevance to the specific behaviors being sought in smoking. The handbook's generic measures correspond to the outcomes of Decision-Making, Interpersonal Relationships, and Respect for One's Body.

RELATIONSHIPS AMONG OUTCOME MEASURES. In general, it is assumed that a person's knowledge, affect, and skills contribute directly to that individual's behavior. And because most health education programs are ultimately interested in modifying participants' behaviors, the acquisition of appropriate knowledge, affect, and skills can be seen as precursive to the attainment of desired behavior. This notion of outcomes that precede desired behaviors can be used in evaluating health education programs that have not succeeded in achieving desired behavioral changes. In such programs it is often possible to detect shortcomings in the promotion of en route outcomes dealing with knowledge, skills, or affect.

The experts who determined the outcomes for this handbook were asked to suggest smoking outcomes dealing with behaviors, knowledge, skills, and affect. The panelists were sometimes able to rely on empirical studies relating, for example, behavior to skills. In many instances, however, the links among the four categories of outcomes were posited chiefly on the basis of experience-based judgments. Thus, a causal or highly associational network among the four categories of measures should not be assumed to have been demonstrated. Rather, the relationships among the various types of outcomes should be regarded as reflecting the informed judgments of experts.

OTHER INDICATORS OF EFFECTS

As indicated earlier, this handbook does not contain observational assessment techniques or physiologic measures. Only the previously described behavioral, knowledge, skill and affective measures have been included. These four categories certainly do not exhaust the range of possible assessment tools that evaluators should consider when they undertake an evaluation. There are other sorts of extant data and more complex assessment strategies which can be helpful.

As an example of the kind of existing data that evaluators often find useful, we can think of the numerous archival records of relevance to health behavior, for example, records of doctor's visits or the incidence of heart disease. Such archival data can often prove illuminating in making decisions about health education programs. Evaluators must attempt to locate existing records of phenomena that pertain to the decisions under consideration.

To illustrate the kinds of more elaborate assessment strategies which might be used, we will briefly describe one technique designed to secure responses to sensitive questions. The randomized response technique (RRT) is an effective technique for obtaining accurate information from respondents on a small number of highly sensitive issues such as the use of illegal drugs or alcohol. By presenting respondents with both a sensitive and a nonsensitive question, and by having respondents themselves use a random procedure (such as a coin flip) to select the "to be answered" question, respondents are expected to answer the sensitive question honestly because the interviewer cannot know which question is actually being answered. An example of the nonsensitive question might be, "Have you attended a PTA meeting at school during the past 12 months?" The sensitive question might ask, "Have you used heroin during the past 12 months?" An accurate estimate of the number of people responding "yes" to the sensitive question (for example, the number of people reporting heroin use) can then be computed by subtracting the likely proportion of "yes" responses to the nonsensitive question.*

Another strategy for gaining information about sensitive topics involves the use of respondents as "informants" who report information about relatives, friends, etc. Often these reports can be made so that the individual about whom the report is made remains anonymous. This procedure, described as the multiplicity technique by some and the nominative technique by others, is described in more detailed elsewhere.**

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* *For additional information about the randomized response technique, see Annotated Reference No. 39.*

***Fishborne, P. Survey techniques for studying threatening topics: A case study in the use of heroin. Unpublished doctoral dissertation, New York University, 1980.*

EXISTING MEASURES

In addition to the development of new measures to coincide with high priority outcomes, an extensive effort was made to identify existing high quality measures which corresponded to these outcomes. This effort included a comprehensive computer search of seven data bases and reviews of measures, books, and articles recommended by panelists and panel-identified experts.

The computer search was conducted at the UCLA Biomedical Library using the following data bases: the Medline, ERIC (Educational Resources Information Center), Psychological Abstracts, Excerpta Medica, NIMH (National Institute of Mental Health), NCMH (National Clearinghouse for Mental Health), and SSIE (Smithsonian Science Information Exchange). In addition to input from the project panelists, smoking experts and agencies identified during the project were sent summaries of the panel meeting accompanied by a letter requesting assistance in the effort to locate existing measures and relevant publications.

Once collected, all measures were subjected to an initial content screening by an experienced reviewer. The purpose of this screening was to determine whether a measure corresponded to the panel-identified outcomes. Measures which satisfied the outcome-congruence screening were then subjected to a further psychometric review. Prior to initiating the review of a measure's psychometric quality, however, the authors or agencies who developed the measure were contacted and asked for any available supporting documentation about the instrument. In addition to being given an overview of the purpose of the project, authors were informed of the criteria to be used in the psychometric review so that they might supply relevant data.

The primary criterion for a measure's inclusion in this handbook was its degree of congruence with panel-identified outcomes. Many measures of high quality had to be excluded because they did not possess sufficient correspondence with the outcomes to be of use to evaluators interested in assessing those outcomes. There are, in fact, several handbook outcomes for which no previously developed measures have been included, primarily because existing measures targeted to those outcomes could not be found. When multiple measures with adequate correspondence to given outcomes were found, the measures included in the handbook were selected on the basis of their item quality and the extent to which the set of measures selected for an outcome represented a range of approaches to the measurement of that outcome.

TEST SPECIFICATIONS

A set of test specifications was created to guide in the construction of each measure developed for the handbook. As indicated in the first chapter, this set of specifications operationalizes the outcome statement for which the measure serves as an indicator. The test specifications for all newly developed measures are presented in Chapter Seven.

Evaluators and program personnel should find the test specifications quite useful, as the specifications present, in unequivocal terms, the attributes being measured. This clarification of what is assessed should permit program personnel and evaluators to target their efforts to the program outcome as operationalized by the set of specifications. While the measures can be employed without referring to the specifications, handbook users will be markedly benefited by studying the set of specifications for each measure selected. Program personnel, in particular, may want to consult the content supplements and the descriptions associated with many of the measures when planning their programs.

The test specifications also permit program personnel to generate additional test items, if they desire, by following the rules for item construction which have been set forth. Additional test items for knowledge and skill outcomes may be particularly useful during the course of a program as instructional tools and to monitor participant progress. Evaluators should realize, however, that any new measures created from the test specifications will not necessarily be equivalent forms, that is, forms equal in difficulty and other psychometric aspects to the form of the measure presented in the handbook. Performance information on both the original form and any alternate forms would have to be gathered before the equivalence of such measures could be demonstrated. Therefore, evaluators should be reluctant to use alternate forms as though they are equivalent, for example, in a pretest-posttest design.

To reiterate, then, Chapters Five, Six, and Seven, respectively, contain the newly developed measures, the existing measures, and the specifications for the newly developed measures. All of the outcomes upon which these measures are based are presented in Chapter Four. Each chapter is introduced with a brief description of its contents. Chapter Three offers suggestions for using the handbook's measures in program evaluation.

CHAPTER THREE

USING THE HANDBOOK'S MEASURES

SELECTING EVALUATION MEASURES

The measures selected for a program evaluation should correspond, as closely as possible, to outcomes of interest and importance to program personnel or other decision-makers associated with the program (for example, the program's sponsoring agency). In some cases the measures may correspond directly to program goals. Other measures may be selected because they correspond to outcomes of ancillary interest. For example, if a program were focused on modifying participants' health behaviors, it might be of interest to see if attitudinal changes also resulted.

The desire to have a broad understanding of the impact of the program, potentially across all four areas for which this handbook presents measures, must be balanced with the need to avoid unnecessary use of program or evaluation resources. There are likely to be many interesting questions to ask about a program. But answering those questions requires the time and money of the program and the time of program participants. Because personnel and financial resources are limited, and also because participants may come to resent what they consider to be unnecessary intrusions, measures should be selected carefully. An emphasis should be placed on using those measures that are likely to have implications for improving the program in the future.

One way to use the handbook and its measures is to determine the extent to which the outcome statements in Chapter Four coincide with a program's stated objectives. Measures for those outcomes can then be considered as possible assessment devices for gauging the attainment of program objectives.

Another way to use the handbook is to consider its measures as reflecting possible outcomes that might be promoted by programs. As indicated earlier, program designers can create more effective programs if they comprehend clearly the nature of the targets at which the program is aimed. Although the measures included in this handbook are far from exhaustive, and certainly not prescriptive in any sense, they do represent a range of possible program aspirations. Furthermore, the measures are based on outcomes deemed important by a panel of experts well acquainted with programs in smoking.

By reviewing all of the measures in the handbook, at least by reading each measure's accompanying description, program designers and program evaluators can increase the range of options they may wish to consider as potential program outcomes.

All of the handbook's measures have been prepared for copying and reproduction by health educators. Handbook users may use all the measures without further permission from any authors or agencies.

ADMINISTRATION PROCEDURES

Evaluators need not develop special directions in order to administer the measures presented in this handbook. Directions are provided with each measure, informing respondents how to supply the requested information. Test administrators should be sure to familiarize themselves with the directions and the measure itself before administering it. They can thus provide clear and accurate information to any requests for clarification by respondents.

Test administrators, whether or not they are program personnel, should be sensitive to the potential difficulty some respondents may have in reading either the directions or the test items themselves, hence be available to assist respondents as needed. It may be useful, if there is concern about the reading ability of the respondents, to read the directions aloud and check that all respondents understand what they are to do. If there is doubt about respondents' ability to read the measure itself, the items can generally be administered orally, either to groups of participants or to individuals. Respondents should be encouraged to ask questions if they do not understand their task or any items on a measure.

As a related issue, the measures do not require respondents to supply their names. This helps ensure the confidentiality of responses to potentially sensitive issues. If program evaluators believe that the integrity of the data would not be compromised by asking respondents to provide their names or other personal or demographic information, such information may be requested. Alternatively, if evaluators wish to link performance on one measure to performance on another, every individual can be assigned a code number to use whenever providing data. Respondents may select their own identification code (for example, their mother's maiden name) if this would help alleviate fears about preserving confidentiality. When using codes, it is important that the same one be used on all measures.

The use of anonymously completed measures illustrates a general concern associated with the administration of measures in a program evaluation context. Test administrators should strive to create conditions in which respondents are as comfortable as possible about supplying truthful answers. Too often program personnel may administer evaluation devices under conditions which create subtle pressures for participants to respond in a manner satisfying to program staff. An effective evaluation, however, is based on honest responses, not socially desirable ones. Thus, all aspects of measure administration should be conducted with careful attention to the possible impact on participants' responses. For example, an external person rather than a member of the project staff could administer measures. Responses could be collected anonymously, then placed in sealed envelopes in plain view of all participants. Other such techniques might be devised in order to elicit honest responses. Additional considerations related to possible response bias will be discussed later in this chapter.*

SCORING

Scoring keys are provided for all newly developed knowledge, skill, and affective measures, as well as for all existing measures which had such information available. A more complete justification of the proposed scoring scheme associated with each newly developed affective measure is also presented in its corresponding test specifications.

**For additional information about administration procedures, see Annotated References Nos. 15 and 27.*

As a general rule, knowledge and skill measures are scored by computing the total number of correct responses. Affective measures are scored by computing the average response for a given measure. This procedure for affective measures simplifies interpretation of the obtained score. For example, a respondent would obtain a score of 4.2 on a 5-point scale, rather than obtaining a score of, for example, 46 out of 55 points. The procedure also reduces confusion in dealing with omitted responses.

On the newly developed measures, higher scores are better. That is, higher scores on the knowledge and skill measures indicate that the respondents answered more items correctly. Higher scores on the affective and behavioral measures indicate desirable affect or behavior.

Items on some of the newly developed affective measures are categorized so that the different dimensions in the measure can be considered. Part scores as well as total scores can be computed to provide a more in-depth analysis of participants' responses. Similarly, an analysis of incorrect responses is provided for selected skill measures to assist program personnel in determining the kinds of incorrect answers that were selected by examinees. The test specifications for these measures provide a complete explanation of the correct and incorrect answer categories. By considering not only whether items were answered correctly, but also by looking for patterns in the incorrect responses and trying to infer why specific incorrect options were selected, health educators can often target their programs towards reducing common misconceptions.

MISSING DATA

One of the most frequent sources of confusion in scoring measures stems from the treatment of missing data. For purposes of this discussion we shall consider two types of missing data. The first type arises when a respondent does not answer certain items on a measure. The second type occurs when a respondent does not return a measure at all.

OMITTED RESPONSES. Suppose a respondent omits one or more items on a measure. Should the evaluator infer that the respondent didn't read the item, didn't know the answer, or didn't understand the question? The way these concerns are treated depends on the type of measure (cognitive, affective, or behavioral), the scoring procedures being used, and the judgment of the person responsible for data analysis. As a general guideline, one should try to treat omitted responses in a manner consonant with the most plausible assumptions about why they were omitted. A few examples may illustrate.

Blanks or omitted responses are often treated as incorrect responses for cognitive measures (that is, those assessing knowledge and skill). Respondents' scores are then the sum of the correct responses, under the assumption that respondents would have marked an answer if they felt they knew it. If there are other more plausible assumptions about why a response was omitted, such as confusion about what the question was asking, evaluators might consider missing and incorrect responses separately, thus creating a slight increase in the complexity of the analysis procedure.

The best procedure for dealing with missing affective and behavioral responses should, again, be consistent with the general guideline of selecting the procedure that requires the fewest unsubstantiated assumptions about the missing responses. Consider the case in which respondents are asked to indicate the extent of their agreement with a series of statements on, for example, a 5-point Likert scale. Because a score on this measure is obtained by averaging the numerical values of the responses, omitted responses can usually be ignored, and a score computed based on the items for which there are responses. This assumes that the responses to the unanswered questions would be the same as the responses to the questions that were answered. A different approach may be used if this assumption seems unwarranted. For example, if all the items of a particular type are omitted, it may be unwise to assume that the answers to those items would be the same as the answers to all the other items. In this case, the entire measure may have to be excluded from the analysis.

In affective measures which require respondents to estimate their confidence regarding a series of statements, procedures similar to those just discussed for treating missing responses can be used. Hence, on affective measures respondents are typically not penalized as they are on cognitive measures for omitting responses.

UNRETURNED MEASURES. The problem of how to deal with missing data when there are no responses for some participants on selected measures is a more difficult one than the problem just addressed. That is, what can be done if, because the respondent either refused or was unavailable to complete the measure, we have no data at all regarding a given participant's status on a given outcome? The answer to this question depends on the data-gathering design that is being used and on the most likely reasons that the measure was not obtained.

One of the more frequent contexts in which this problem arises is when a pretest-posttest design is used. In this design, measures are administered to program participants prior to beginning the program and, again, at the conclusion of the program. Observed changes between pretest and posttest scores are attributed to the impact of the program. But suppose that some participants do not complete the program and, therefore, are unavailable to complete the posttest questionnaires. Differences between the participants' average pretest scores and their average posttest scores may come from systematic differences between the individuals who took the pretest and the individuals who completed the program, hence took the posttest. For example, suppose that, even before a program began, some participants had strong intentions to behave in a healthful way. Others did not. Now, suppose that a large number of those respondents who did not intend to behave in a healthful way dropped out of the program. If we considered the posttest responses of those participants who remained in the program for its duration, while also considering the pretest responses of all the original participants, we would find that the posttest scores indicated stronger intentions to behave in a healthful way. But such a shift in scores might not reflect the program's effect on participants' intentions. The shift might arise because a disproportionate number of respondents who did not intend to change their behavior had left the program. Thus, observed changes might be due to differences in respondent characteristics rather than program impact.

To safeguard against this possibility, evaluators must be attentive to the characteristics of respondents, particularly when data from different points in time are compared. In the preceding example, it might be advisable to exclude the pretest data of those participants who did not provide posttest data, and to compute pretest and posttest means on the basis of those individuals for whom complete data exist. To do this would require using some unique and consistent identification code on all measures completed by each participant, so that one could know whose pretest responses should be excluded. If it is necessary to eliminate a particular category of respondents from the analysis, evaluators should be aware of the limitations this imposes on the ability to generalize the findings from the remaining respondents to the broader group of eligible participants. This means that in the example where a large number of participants left the program, we should only describe the effects of the program on participants who already intend to make the desired behavioral change, not on any person who might consider enrolling in this particular health education program.

The key issue in deciding what to do when individuals or groups of individuals fail to return some measures is to determine the extent to which the non-respondents differ in any systematic way from the respondents. Are non-respondents less motivated initially? Do they vary on any major demographic variables, such as sex, ethnicity, or previous education? Are they more knowledgeable about the given health area than those who completed all the measures? If the answer to any of these questions is yes, then it is important not to compare all pretest responses with all posttest responses. If, however, there appear to be no systematic differences between those respondents for whom complete data are available and those who did not return all measures, then it may be acceptable to consider all available data. This might be the case if, for example, several participants were sick on the day posttest measures were administered, but the absent respondents did not differ systematically from the other participants. Thus, the degree of attention to this type of missing data depends on the extent to which there is reason to suspect a systematic bias in the findings as a result of the missing information. At the very least, an evaluator should describe the characteristics of the participants who completed the measures at each administration period, so that those using the evaluation report can consider for themselves whether the assumptions guiding the treatment of missing data appear to be justified.

INTERPRETING RESPONSES

It would be comforting to assume that the data, once collected and analyzed, provide accurate accounts of the respondents' cognitive, affective, and behavioral status. Unfortunately, however, there are many instances in which one cannot be certain that the inferences made from the data are fully justified. For example, in the cognitive areas we assume that the more items correctly answered by an individual, the more that individual knows about the outcome being tested. But it is also possible that some respondents who are highly knowledgeable about the information being tested did not get high scores because they couldn't understand some of the items or had a hard time reading the test. It is the test developer's responsibility to try to reduce such confusion by ensuring that the items are written as simply as possible and that there are no extraneous sources of difficulty. It is the test user's responsibility to remember that there will inevitably be the potential for some confusion, and to interpret the measures in light of this likelihood.

The problem of interpreting responses is more apparent with affective and behavioral measures. It has been well documented that there are "response sets" or systematic sources of bias in responses to such measures. To illustrate, one of the best known response sets involves social desirability, or the tendency of individuals to provide responses which are consistent with what they believe to be expected of them. So, for example, individuals might indicate that they intend to refrain from smoking because they believe that it is "appropriate" for them to do so, rather than because they actually have that intention. There is little that one can do to preclude completely the possibility of such response sets. To reduce, at least somewhat, the likelihood of response sets, evaluators can (1) avoid language that clearly indicates the desired response, (2) preserve the anonymity of respondents, and (3) ensure respondents that the evaluation is more concerned with understanding the program than with describing individual participants. An atmosphere which promotes honesty rather than "proper behavior" is definitely more conducive to obtaining accurate responses in sensitive areas.

Although the handbook's measures have been developed to encourage accurate responses, it is the responsibility of program personnel and evaluators to do all that they can to promote such responses and to minimize the threat of repercussions should individuals behave in undesirable ways. Guaranteeing anonymity is one common procedure, but establishing credibility with respondents is also critical. In addition, observation, physiologic measurement, and procedures such as the randomized response technique may be used to verify the accuracy of behavioral self-reports.

The problem is not as overwhelming as it may sound. Clearly, whenever one must rely on self-report data, the possibility of inaccurate responses exists. But careful measure development can reduce the degree of perceived threat in the measures and this can promote honesty. Furthermore, program personnel can help allay the anxiety of respondents and in so doing increase the honesty of responses. In addition, the threat of corroboration by an external source can often reduce the likelihood that respondents will bias their responses. Many data-gathering designs compare responses at one point in time to responses at another, or compare different groups of respondents to each other. In these comparative designs, whatever systematic bias there is may be found at all measurement times and, hence, may not influence indices of change. By being aware that such problems may exist, those who use evaluation measures can encourage caution in interpreting evaluation findings and urge verification of data where it is warranted.

ENRICHING EVALUATIONS

This handbook provides measures that may be useful in assessing a smoking program's outcomes. Typically, a health educator might select not merely one but several measures to use in a program evaluation. Multiple outcome measures can markedly enhance the quality of an evaluation.

Although the outcomes measured in the handbook have been deemed important, they may not coincide directly with the outcomes of interest to any given program. And they certainly do not exhaust the issues that may be of interest to those individuals involved in a program. Program evaluators and personnel should not limit their data-gathering efforts to the measures provided in this handbook. Rather, they should supplement these measures with other strategies that address the particulars of the evaluation settings in which they find themselves.

The emphases of any supplementary evaluation activities should coincide with the information needs and interests of those concerned with the program. Probably the most useful information elicits ways to enhance the effectiveness of the program, either as it has already been implemented or as it will be carried out in similar programs planned for the future. For example, questionnaires may be administered to program participants asking them to identify any follow-up support or information they might need. Participants might also be able to provide specific suggestions for improvement of the program should it be offered to others.

It is impossible to isolate all the information that might be useful to gather for an evaluation. But the following point cannot be overstated: Evaluations should focus on the systematic collection of data that can be used to improve the quality of health education programs and, in turn, the well-being of participants. Evaluation must increase the effectiveness of health education programs. It can only fulfill this promise if those guiding the evaluative efforts use their resources wisely. The measures that comprise the majority of this handbook should provide a solid foundation for effective evaluation efforts. But program personnel and evaluators in the field must structure evaluations to serve the needs of all those with a stake in the findings, and their professional insights are likely to be the best guide possible.

USING UNPROVEN MEASURES

In the remainder of this handbook there are numerous measures available for use by evaluators of health education programs. The measures developed specifically for this project, as well as some of the already existing measures included here, share one substantial shortcoming. They have not been subjected to rigorous empirical investigations to ascertain their psychometric qualities, especially their reliability and validity. When using such measures, how should program evaluators proceed? The answer is all too clear--with great caution.

Although all of the measures included in the handbook were developed under close scrutiny, until there have been reliability and validity studies carried out which verify those measures' technical adequacy, they should be employed with substantial care. To illustrate, in the absence of reliability and validity data, one should be most reluctant to draw inferences about the meaningfulness of an individual's score on particular measures.

In using measures for purposes of program evaluation, we often aggregate results for a group of participants rather than working with individual participant's responses. By using the pooled responses of many individuals, we can have more confidence in our results because anomalous scores will tend either to cancel each other out or be outweighed by the total set of responses. Even with such aggregated scores, however, care is warranted when using measures whose reliability and validity have not been empirically confirmed.

The general caveat regarding the use of measures which have not yet been subjected to empirical analysis is to proceed very carefully in employing such assessment instruments. The new measures that are included in Chapter Five of the handbook have been developed employing a variety of internal and external review procedures to assure that their content and form are appropriate. Although one can have confidence that their development was systematic and thoughtful, there has been no opportunity to subject those measures to empirical verification. Such an appraisal of the new measures' technical adequacy is planned for the future. It is likely that the handbook's measures may be superior to the hastily created measures often seen in the evaluation of health education programs. Nonetheless, evaluators of health education programs should regard the handbook's measures as a resource to be used--but to be used with prudence.

CHAPTER FOUR

SMOKING PROGRAM OUTCOMES

The outcomes presented in this chapter are program evaluation goals identified by a panel of subject matter and health education experts selected as advisors for this project. The panelists identified one major behavioral outcome, namely, refraining from smoking. Knowledge, skill, and affective outcomes considered likely to predispose individuals to adopt this target behavior were also selected. The process by which these outcomes were isolated and prioritized is explained more completely in the handbook's Preface.

This chapter's program outcome statements have guided the development of the rest of the handbook. Chapter Five presents newly developed measures designed to assess each outcome. Chapter Six contains existing measures selected for their congruence with the outcome statements. Chapter Seven consists of test specifications for all the newly developed measures. These specifications, in essence, operationalize the outcomes.

The outcome statements that follow are relatively brief definitions of a particular behavior, knowledge, skill, or attitude considered important for smoking health education programs. The title of each outcome statement is used throughout the handbook to reference the measures corresponding to it. As a further aid to handbook users, the outcome statements presented in this chapter are accompanied by the titles of the measures that correspond to each. The target population for each measure is also noted. Handbook users can locate each measure for an outcome by turning to the page specified.

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BEHAVIORAL OUTCOME

REFRAINING FROM SMOKING

Individuals who never have smoked on more than an experimental basis do not initiate the regular use of any tobacco-related products; individuals who previously have smoked on more than an experimental basis abstain from the use of all tobacco-related products.

Smoking Questionnaire . . . . page 67

Target population: Adults or Adolescents

Questions About You . . . . page 71

Target population: Elementary school children

Smoking Habits Questionnaire . . . . page 198

Target population: Adults or Adolescents

Health Insurance Study Smoking Battery . . . . . . page 203

Target population: Adults or Adolescents

KNOWLEDGE OUTCOMES

CONSEQUENCES OF SMOKING

Individuals can accurately recall information about the possible health, social, and economic consequences associated with smoking.

Smoking and its Effects . . . . page 73

Target population: Adults or Adolescents

Facts About Smoking . . . . page 77

Target population: Elementary school children

UTILIZATION OF SITUATIONAL CONTROL TECHNIQUES

Individuals can accurately recall information about smoking cues and possible response techniques designed to control the smoking behaviors associated with these cues.

Controlling Smoking Habits . . . . page 80

Target population: Adults or Adolescents

SKILL OUTCOMES

RESPONDING TO SMOKING CUES

Individuals can select appropriate nonsmoking responses to smoking cues by using situational control techniques.

Breaking Smoking Habits . . . . page 84

Target population: Adults or Adolescents

ASSERTIVENESS IN RELATION TO SMOKING

Individuals can use assertiveness techniques in resisting peer pressure to smoke and in asking others to refrain from smoking.

Smoking and Assertiveness . . . . page 91

Target population: Adults or Adolescents

USING SYSTEMATIC DECISION-MAKING SKILLS

Individuals can use systematic decision-making skills in health-related contexts.

Decision-Making . . . . page 99

Target population: Adults or Adolescents

Systematic Decision-Making . . . . page 110

Target population: Adults or Adolescents

Making Decisions . . . . page 127

Target population: Elementary school children

Make A Decision . . . . page 134

Target population: Elementary school children

INTERPERSONAL RELATIONSHIPS: EFFECTIVE COMMUNICATION TECHNIQUES

Individuals can interact effectively with significant others in their lives. The nature of these interpersonal relationships will be such that individuals communicate clear and direct messages in health-related situations.

Communicating About Smoking . . . . page 141

Target population: Adults or Adolescents

Talking About Smoking . . . . page 149

Target population: Elementary school children

INTERPERSONAL RELATIONSHIPS: EFFECTIVE RESPONSE TECHNIQUES

Individuals can interact effectively with significant others in their lives. The nature of these interpersonal relationships will be such that individuals respond with understanding and acceptance to the messages of others in health-related situations.

Responding to Others About Smoking . . . . page 154

Target population: Adults or Adolescents

AFFECTIVE OUTCOMES

PERCEIVED CONSEQUENCES OF SMOKING

Individuals believe that nonsmokers are healthier, more aesthetically appealing, better able to perform athletically, and more socially accepted than individuals who smoke.

People Profiles . . . . page 162

Target population: Adults or Adolescents

Think About People . . . . page 166

Target population: Elementary school children

Do You Want to Change Your Smoking Habits? . . . . page 208

Target population: Adults or Adolescents (current smokers)

PERCEIVED ABILITY TO REFRAIN FROM SMOKING

Individuals believe that they possess the ability to abstain from smoking. This perception of capability includes perceived abilities to control personal smoking behaviors and to resist external pressures to smoke.

Refraining from Smoking . . . . page 170

Target population: Adults or Adolescents
(current or former smokers)

Smoking Situations . . . . page 211

Target population: Adults or Adolescents
(current or former smokers)

Smoking Self-Efficacy Questionnaire (SSEQ) . . . . page 215

Target population: Adults or Adolescents
(current or former smokers)

Posttreatment Confidence Questionnaire . . . . . . page 221

Target population: Adults or Adolescents
(current or former smokers)

INTENTION TO REFRAIN FROM SMOKING

Individuals believe that they intend to abstain from smoking.

Smoking Survey . . . . page 174

Target population: Adults or Adolescents

About Smoking . . . . page 177

Target population: Elementary school children

BELIEF IN THE UTILITY OF SYSTEMATIC DECISION-MAKING

Individuals believe that a systematic decision-making process is an effective way of making decisions.

Ideas About Systematic Decision-Making . . . . . . page 180

Target population: Adults or Adolescents

Ideas About Decisions . . . . page 184

Target population: Elementary school children

INTENTION TO USE SYSTEMATIC DECISION-MAKING

Individuals believe that they will use systematic decision-making in a variety of situations.

Would You Use Systematic Decision-Making? . . . . . page 187

Target population: Adults or Adolescents

Would You Make Careful Decisions? . . . . page 191

Target population: Elementary school children

RESPECT FOR ONE'S BODY

Individuals are willing to engage in those activities that are indicative of a respect for their body and the need to take care of it.

My Body . . . . page 194

Target population: Elementary school children

CHAPTER FIVE

NEWLY DEVELOPED MEASURES

This chapter contains all of the measures that have been newly developed to correspond to the program outcome statements listed in Chapter Four. The measures are presented in the same order as the outcome statements, that is, behavior followed by knowledge, skill, and affect.

MEASURE TITLE PAGE

A title page precedes each measure. This page indicates the type of measure (behavioral, knowledge, skill, or affective), the title of the outcome assessed, and the target population for the instrument. A general description is presented, providing an overview of the assessment strategy employed in the measure. Finally, in the section labeled additional information, the pages in the handbook where the test specifications for the measure can be found are cited.

USING THE MEASURES

All of the measures in this chapter have been readied for photocopying, with directions to respondents printed at the top of the first page of each instrument. Scoring instructions follow all measures. These instructions have been placed on separate pages to facilitate reproduction of the measures for administration. All of the measures in this chapter are in the public domain, hence handbook users have permission to employ them for health education uses.

USING THE TEST SPECIFICATIONS

The test specifications for the newly developed measures are found in Chapter Seven. Handbook users may wish to review these specifications when considering the measures themselves. Each measure's set of specifications describes in detail the attribute measured by the instrument and the manner in which the measurement is accomplished.

In addition to describing how a measure has been constructed, test specifications present other program-relevant information, according to the type of measure being considered, as explained below.

TEST SPECIFICATIONS FOR BEHAVIORAL MEASURES. These specifications include guidelines for scoring and interpreting the data collected by a measure.

TEST SPECIFICATIONS FOR KNOWLEDGE MEASURES. These specifications contain an all-inclusive listing of the content eligible for testing. In all instances, this content extends beyond the information tested in the form of the measure appearing in the handbook.

TEST SPECIFICATIONS FOR SKILL MEASURES. These specifications include a definition of the types of information contained in test questions and the criteria used to determine correct and incorrect answer choice options. For example, the decision-making skill measures presented in the handbook are based upon a systematic decision-making model. The test specifications for these measures present this model in complete detail, indicating the relationship between the model and the test items based upon it.

TEST SPECIFICATIONS FOR AFFECTIVE MEASURES. These specifications include an explanation of the rationale underlying the scoring and interpretation of a measure.

As can be seen, only by reviewing a measure's test specifications can a potential user of the measure gain a thorough understanding of the measure's intellectual underpinnings. Handbook users are strongly urged to review a measure and its specifications as a totality.

SMOKING QUESTIONNAIRE

TYPE OF MEASURE: Behavioral

OUTCOME ASSESSED: Refraining from Smoking

TARGET POPULATION: Adults or Adolescents

GENERAL DESCRIPTION:

Individuals are asked about their smoking behavior to determine if they currently smoke. This information can be used as a measure of how effectively a program has aided participants in refraining from smoking. For individuals who indicate that they do currently smoke, this measure elicits the specific characteristics of that smoking behavior, including substance, frequency, and topography, in order to measure progress towards the goal of complete cessation.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 228-230.

SMOKING QUESTIONNAIRE

Please answer the following question as carefully as you can.

1. Have you smoked any cigarettes during the past week?

____ a. Yes
____ b. No

If you checked "Yes," please go on to question 2 below. If you checked "No," please go on to question 8 on p. 2.

2. Think back over the past week. On the average, about how many cigarettes did you smoke each day? ________
(1 pack = 20 cigarettes)

3. What brand of cigarette did you smoke the most during the past week? ____________________

4. In general, what type of cigarettes did you smoke?

a. Tip: _____ Filtered
_____ Unfiltered
_____ An equal amount of both types
_____ Don't know

b. Length: _____ Regular
_____ King size
_____ 100 Millimeter
_____ 120 Millimeter
_____ Different sizes
_____ Don't know

c. Tar and Nicotine Level: ____ High tar and nicotine
____ Medium tar and nicotine
____ Low tar and nicotine
____ Different levels of tar and nicotine
____ Don't know

d. Type: _____ Mentholated
_____ Plain
_____ An equal amount of both types
_____ Don't know

5. In general, how deeply did you inhale when smoking cigarettes?

____ a. I inhaled deeply into my chest.
____ b. I inhaled only partly into my chest.
____ c. I inhaled into my throat only.
____ d. I inhaled into the back of my mouth only.
____ e. I just puffed. I didn't really inhale at all.

6. In general, how far down did you let each cigarette burn before you put it out?

____ a. As far down as possible
____ b. About 3/4 of the way down
____ c. About 1/2 of the way down
____ d. Less than 1/2 of the way down

7. In general, how much of each cigarette did you let burn without smoking it?

____ a. Most of it
____ b. Some of it
____ c. Almost none of it

8. Have you smoked any cigars during the past week?

____ a. Yes
____ b. No

If you checked "Yes" on question 8, please go on to question 9. If you checked "No," please go on to question 11.

9. Think back over the past week. On the average, about how many cigars did you smoke each day? ____________

10. In general, how deeply did you inhale when smoking cigars?

____ a. I inhaled deeply into my chest.
____ b. I inhaled only partly into my chest.
____ c. I inhaled into my throat only.
____ d. I inhaled into the back of my mouth only.
____ e. I just puffed. I didn't really inhale at all.

11. Have you smoked a pipe during the past week?

____ a. Yes
____ b. No

If you checked "Yes" on question 11, please go on to question 12. If you checked "No," you have finished this Smoking Questionnaire. Thank you.

12. Now, think back over the past week. On the average, about how many pipefuls of tobacco did you smoke each day? __________

13. In general, how deeply did you inhale when smoking a pipe?

____ a. I inhaled deeply into my chest.
____ b. I inhaled only partly into my chest.
____ c. I inhaled into my throat only.
____ d. I inhaled into the back of my mouth only.
____ e. I just puffed. I didn't really inhale at all.

**You have finished this Smoking Questionnaire.
Thank you.**

QUESTIONS ABOUT YOU

TYPE OF MEASURE: Behavioral

OUTCOME ASSESSED: Refraining from Smoking

TARGET POPULATION: Elementary school children

GENERAL DESCRIPTION:

Children are asked about their smoking behavior to determine if they smoke, how many cigarettes they smoke, and whether or not they inhale when they smoke. Responses can be used as a measure of the extent of smoking behavior among elementary school-age children.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 231-232.

QUESTIONS ABOUT YOU

There are two questions below. Please answer both of them. For each question, put a check next to your answer. Your answers will be kept secret, so please tell the truth.

1. Last week, about how many cigarettes did you smoke each day?

____a. I didn't smoke
____b. 1-5
____c. 6-10
____d. 11-20
____e. More than 20

2. If you smoked, how often did you inhale?

____a. I didn't smoke
____b. I just puffed
____c. I inhaled only some of the time
____d. I inhaled almost all of the time

SMOKING AND ITS EFFECTS

TYPE OF MEASURE:	Knowledge
OUTCOME ASSESSED:	Consequences of Smoking
TARGET POPULATION:	Adults or Adolescents

GENERAL DESCRIPTION:

Individuals are presented with statements about biomedical, economic, and social consequences of smoking behavior. Individuals indicate whether each statement is true or false.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 233-242.

SMOKING AND ITS EFFECTS

This test consists of 20 statements about the effects of smoking. Some of the statements are true and some are false. If you think a statement is true, put a check in the column labeled TRUE. If you think a statement is false, put a check in the column labeled FALSE.

TRUE FALSE

____ ____ 1. People who smoke filter cigarettes are more likely to develop lung cancer than people who smoke unfiltered cigarettes.

____ ____ 2. Nicotine causes blood vessels to increase in size.

____ ____ 3. The risk of developing lung cancer increases the more deeply that a smoker inhales.

____ ____ 4. If a woman stops smoking by the eighth month of her pregnancy, the health risks to her infant are reduced to those of nonsmoking women.

____ ____ 5. One in every three deaths from cancer is related to cigarette smoking.

____ ____ 6. About 10% of all hospital and medical costs in the United States are related to tobacco.

____ ____ 7. A person who has not smoked for at least ten years has the same chance of developing lung cancer as a person who never smoked.

____ ____ 8. Carbon monoxide increases the amount of oxygen in the blood.

____ ____ 9. Pipe and cigar smokers are more likely than nonsmokers to develop lung cancer.

____ ____ 10. Cigarette smokers are twice as likely as nonsmokers to die of coronary heart disease.

TRUE FALSE

____ ____ 11. People who smoke unfiltered cigarettes inhale more carbon monoxide than smokers of filter cigarettes.

____ ____ 12. Smokers of low tar and low nicotine cigarettes have lower death rates than smokers of high tar and high nicotine cigarettes.

____ ____ 13. Cigarette smoking does not change the risk associated with exposure to dangerous materials such as asbestos.

____ ____ 14. Cigarette smokers are 25 times more likely than nonsmokers to develop lung cancer.

____ ____ 15. Most people gain weight when they quit smoking.

____ ____ 16. Nicotine causes the heart to beat faster.

____ ____ 17. Millions of workdays are lost each year because of diseases related to cigarette smoking.

____ ____ 18. The health risks associated with smoking remain the same even after a person stops smoking.

____ ____ 19. The risk of developing coronary heart disease increases with the number of cigarettes smoked.

____ ____ 20. Pipe smokers who inhale while they smoke are at the same risk of developing lung cancer as pipe smokers who do not inhale.

SCORING KEY

SMOKING AND ITS EFFECTS

Item	Answer
1	F
2	F
3	T
4	F
5	T
6	T
7	T
8	F
9	T
10	T
11	T
12	T
13	F
14	F
15	F
16	T
17	T
18	F
19	T
20	F

FACTS ABOUT SMOKING

TYPE OF MEASURE: Knowledge

OUTCOME ASSESSED: Consequences of Smoking

TARGET POPULATION: Elementary school children

GENERAL DESCRIPTION:

Children are presented with statements about health, social, and economic consequences of smoking. Children indicate whether each statement is true or false.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 243-250.

FACTS ABOUT SMOKING

This test has 15 statements about smoking. Read each one. If the sentence is true, put a check under the word TRUE. If the sentence is false, put a check under the word FALSE.

TRUE	FALSE		
____	____	1.	Cigarettes that are low in tar and nicotine are probably not harmful.
____	____	2.	Most smokers usually feel relaxed when they first stop smoking.
____	____	3.	Tar in cigarettes is harmless to people.
____	____	4.	People who smoke are more likely to have a heart attack than people who don't smoke.
____	____	5.	Low tar cigarettes are safe to smoke.
____	____	6.	Smoking helps people have more friends.
____	____	7.	Teenagers who are good students are less likely to smoke.
____	____	8.	Children whose parents smoke have the same number of coughs and colds as other children.
____	____	9.	Nicotine makes the blood vessels smaller.
____	____	10.	People who smoke are generally in poorer health than people who do not smoke.
____	____	11.	Nicotine makes the heart beat faster.
____	____	12.	People who smoke usually cough a lot.
____	____	13.	Cigarette smoke in the air is probably safe to people who breathe it.
____	____	14.	Smoking can leave a bad smell on a person's breath.
____	____	15.	People who smoke usually have trouble breathing.

SCORING KEY

FACTS ABOUT SMOKING

Item	Answer
1	F
2	F
3	F
4	T
5	F
6	F
7	T
8	F
9	T
10	T
11	T
12	T
13	F
14	T
15	T

CONTROLLING SMOKING HABITS

TYPE OF MEASURE: Knowledge

OUTCOME ASSESSED: Utilization of Situational Control Techniques

TARGET POPULATION: Adults or Adolescents

GENERAL DESCRIPTION:

Individuals are presented with statements describing smoking cues and nonsmoking responses designed to control smoking. Individuals indicate whether each statement is true or false.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 251-258.

CONTROLLING SMOKING HABITS

This test consists of 20 statements about controlling smoking habits. Some of the statements are true and some are false. If you think a statement is true, put a check in the column labeled TRUE. If you think a statement is false, put a check in the column labeled FALSE.

TRUE FALSE

____ ____ 1. Meditation is an effective way to try to keep from smoking when you feel the need to relax.

____ ____ 2. Eating something is an effective way to try to keep from smoking when you are tense and angry.

____ ____ 3. When you are trying to stop smoking, the number of things that make you want to smoke will usually decrease.

____ ____ 4. Understanding why you smoke means being aware of the situations, times, and places that make you want to smoke.

____ ____ 5. Different things may make different people want to smoke.

____ ____ 6. Rewarding yourself for not smoking usually is of little help in stopping smoking.

____ ____ 7. Eating something is an effective way to try to keep from smoking when you feel the need to be stimulated.

____ ____ 8. A particular technique for avoiding smoking usually will work effectively for all smokers.

____ ____ 9. Brisk walking is an effective way to try to keep from smoking when you feel the need to be stimulated.

TRUE FALSE

____ ____ 10. Drawing is an effective way to try to keep from smoking when you feel the need to do something with your hands.

____ ____ 11. Changing routine activities is an effective way to try to keep from smoking when you feel the need to relax.

____ ____ 12. Techniques for avoiding smoking need to be practiced in order to be used effectively.

____ ____ 13. Certain times or places that are part of a person's daily routine can make that person want to smoke.

____ ____ 14. Smoking is a habit that occurs only when an individual thinks about it.

____ ____ 15. Drinking non-alcoholic beverages is an effective way to try to keep from smoking when you feel tense.

____ ____ 16. Reading is an effective way to try to keep from smoking when you feel bored.

____ ____ 17. To be effective, techniques for avoiding smoking should satisfy a person's desire to smoke.

____ ____ 18. A technique for avoiding smoking will be most effective if it is an activity commonly associated with smoking.

____ ____ 19. Eating sugarless candy is an effective way to try to keep from smoking when you feel the need for oral gratification.

____ ____ 20. Doing deep breathing exercises is an effective way to try to keep from smoking when you feel the need to do something with your hands.

SCORING KEY

CONTROLLING SMOKING HABITS

Item	Answer
1	T
2	F
3	F
4	T
5	T
6	F
7	F
8	F
9	T
10	T
11	F
12	T
13	T
14	F
15	F
16	T
17	T
18	F
19	T
20	F

BREAKING SMOKING HABITS

TYPE OF MEASURE: Skill

OUTCOME ASSESSED: Responding to Smoking Cues

TARGET POPULATION: Adults or Adolescents

GENERAL DESCRIPTION:

Individuals are presented with brief descriptions of fictitious persons experiencing commonly occuring smoking cues. They are to select from among possible courses of action the most healthy and effective way to handle each particular cue. The correct course of action will respond to the smoking cue present in the situation with an appropriate nonsmoking response.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 259-262.

BREAKING SMOKING HABITS

This test presents descriptions of people who want to break their smoking habits. Each person is trying to use situational control techniques to deal with specific smoking cues. Read each description. Then circle the letter of the best action for the individual to take.

1. Angela usually smokes while she is drinking a cup of coffee with breakfast. The most healthy and effective way to handle this particular smoking cue would be to:

   A. Take several deep breaths before starting to eat.

   B. Stay at the table for a few minutes after breakfast.

   C. Drink a beverage other than coffee with breakfast.

   D. Skip breakfast and have a cup of coffee later.

2. At least once a day, Danny smokes a cigarette because it tastes so good. The most healthy and effective way to handle this particular smoking cue would be to:

   A. Have something like raw vegetables or a piece of gum available to chew.

   B. Sit quietly for a few minutes whenever the urge to smoke occurs.

   C. Wait for half an hour after first wanting the cigarette before smoking it.

   D. Have something like a pencil or some paper clips available to handle.

3. Rhonda likes to smoke when she is out with friends. The most healthy and effective way to handle this particular smoking cue would be to:

   A. Take part in some physical activities.

   B. Get together with her friends in places where smoking is not allowed.

C. Carry only a few cigarettes when getting together with friends.

D. Meet her friends a half hour later than usual for several weeks.

4. One of the reasons Raymond smokes is because of the pleasure he gets from lighting a cigarette and watching the smoke rise. The most healthy and effective way to handle this particular smoking cue would be to:

A. Switch the brand of cigarettes he is smoking for a while.

B. Have some fruit juice or soda water to drink.

C. Rearrange the furniture in the rooms where he usually smokes.

D. Work on a hobby that requires use of the eyes and the hands.

5. Sandy frequently smokes a cigarette at the end of a meal. The most healthy and effective way to handle this particular smoking cue would be to:

A. Read a book or magazine during the meal.

B. Leave the table immediately after eating and start another activity.

C. Take several deep breaths throughout the meal.

D. Have an extra dessert as a reward for not smoking.

6. Miguel smokes because of the good taste that comes from puffing a cigarette and exhaling the smoke. The most healthy and effective way to handle this particular smoking cue would be to:

A. Take a warm shower to help relax.

B. Have something readily available to chew, such as sugarless gum.

C. Light a cigarette, but do not inhale the smoke.

D. Read an interesting book.

7. Pamela frequently smokes when she is feeling tense or anxious. The most healthy and effective way to handle this particular smoking cue would be to:

   A. Learn a relaxation routine such as deep breathing.

   B. Spend as much time as possible in places where smoking is not allowed.

   C. Ease her tension by smoking only half a cigarette.

   D. Tackle tension-producing activities at different times each day.

8. Denise often copes with anger or frustration by smoking a cigarette. The most healthy and effective way to handle this particular smoking cue would be to:

   A. Work for a while on a craft project.

   B. Smoke during the odd or even hours of the day only.

   C. Chew gum or eat sugarless candy.

   D. Sit quietly for a few minutes and meditate.

9. Kevin smokes cigarettes to help him wake up in the morning. The most healthy and effective way to handle this particular smoking cue would be to:

   A. Put his alarm clock across the room so he must get out of bed to turn it off.

   B. Wait until after breakfast to have his first cigarette.

   C. Do some physical exercise such as stretching or deep breathing when he gets up.

   D. Sleep with the windows open so his bedroom is cool when he wakes up.

10. Mark smokes to maintain his energy level during the day. The most healthy and effective way to handle this particular smoking cue would be to:

    A. Take a few minutes to stretch or jog in place.

    B. Drink soft drinks or eat candy.

    C. Picture himself as a nonsmoker.

    D. Plan his day so that tiring tasks are scheduled in the morning.

11. At the end of a day, Maria smokes a cigarette to help her relax. The most healthy and effective way to handle this particular smoking cue would be to:

    A. Change to a brand of cigarettes that is not as tasty.

    B. Eat a low-calorie bedtime snack.

    C. Take a warm bath or shower.

    D. Learn to do an activity such as drawing or painting.

12. Jimmy finds smoking with wine or beer at parties very enjoyable. The most healthy and effective way to handle this particular smoking cue would be to:

    A. Drink a non-alcoholic beverage such as fruit juice or soda water.

    B. Eat snack foods such as nuts, potato chips, or candy.

    C. Get some physical exercise before going to parties.

    D. Attend parties on the weekends only.

13. Liza usually smokes when she is upset. The most healthy and effective way to handle this particular smoking cue would be to:

    A. Chew sugarless gum.

    B. Practice deep breathing exercises.

    C. Take a pill to help calm her nerves.

    D. Leave the room whenever she gets upset.

14. Roger smokes in order to feel comfortable and relaxed. The most healthy and effective way to handle this particular smoking cue would be to:

    A. Think about the diseases that may be caused by smoking.

    B. Smoke a cigarette without inhaling the smoke.

    C. Move his favorite chair to another room in the house.

    D Listen to soothing music.

15. Vickie smokes when she feels tired and low on energy. The most healthy and effective way to handle this particular smoking cue would be to:

    A. Go to bed early to get more rest.

    B. Avoid leisure activities that are associated with smoking.

    C. Take a brisk walk to get some fresh air.

    D. Smoke several cigarettes so that the experience becomes unpleasant.

SCORING KEY

BREAKING SMOKING HABITS

Item	Answer
1	C
2	A
3	B
4	D
5	B
6	B
7	A
8	D
9	C
10	A
11	C
12	A
13	B
14	D
15	C

INCORRECT ANSWER CHOICE ANALYSES

The incorrect answer choices for each item are listed below using the following method of annotation:

Unhealthy = a response that is unhealthy

No impact = a response that has no direct impact on the smoking cue

	UNHEALTHY	NO IMPACT
1.	D	A & B
2.	C	B & D
3.	C	A & D
4.	A	B & C
5.	D	A & C
6.	C	A & D
7.	C	B & D
8.	B	A & C
9.	B	A & D
10.	B	C & D
11.	A	B & D
12.	B	C & D
13.	C	A & D
14.	B	A & C
15.	D	A & B

SMOKING AND ASSERTIVENESS

TYPE OF MEASURE: Skill

OUTCOME ASSESSED: Assertiveness in Relation to Smoking

TARGET POPULATION: Adults or adolescents

GENERAL DESCRIPTION:

Individuals are presented with descriptions of fictitious person experiencing discomfort due to the presence of others who are smoking or offering smoking materials. Individuals are asked to select from among possible options a course of action that incorporates assertiveness techniques or to indicate that none of the suggested options is appropriate.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 263-265.

SMOKING AND ASSERTIVENESS

This test presents descriptions of people who feel uncomfortable because others are smoking or asking them to smoke. Each person wants to deal with the problem by using assertiveness techniques.

Read each item. Then circle the letter of the action which describes an assertive response to the situation described. If there is no assertive response presented, circle choice D, "None of the above."

1. Carol is watching television with her husband and he is smoking. Carol has been trying to stop smoking, but the smell of her husband's cigarette smoke is weakening her will power. To act assertively, Carol should:

   A. Ask her husband if he would smoke fewer cigarettes while they are together.

   B. Ask her husband if he would smoke in another room.

   C. Move to where she can sit near an open window and breathe fresh air rather than cigarette smoke.

   D. None of the above.

2. George and Susan are spending an evening together. After dinner, Susan suggests that they relax by the fire with after dinner drinks and cigarettes. To act assertively, George should:

   A. Tell Susan that he doesn't want to smoke.

   B. Tell Susan that he has a better idea and ask her to go for a walk.

   C. Hold a lighted cigarette without actually smoking it.

   D. None of the above.

3. Ann has recently stopped smoking, but she finds it hard to control her desire to smoke at the end of a meal. She is at lunch with Bob, a good friend, who prepares to light a cigarette as soon as their plates are cleared from the table. To act assertively, Ann should:

   A. Tell the waiter that it's hard for her to resist smoking when someone else is smoking.

   B. Ask Bob to please wait to smoke until she has left.

   C. Order a dessert to help her ignore Bob's smoking.

   D. None of the above.

4. When Alan decided to quit smoking, he searched his possessions and threw away all the cigarettes he found. His wife Paula still smokes, and she leaves her cigarettes scattered all over the house. To act assertively, Alan should:

   A. Ask Paula if she would keep her cigarettes some place where he can't find them.

   B. Throw away any of Paula's cigarettes that he finds lying around.

   C. Ask Paula if she would smoke only cigarette brands that he does not particularly enjoy.

   D. None of the above.

5. While John and several of his friends are watching a football game on television, a pack of cigarettes is passed around. When everyone except John takes a cigarette, one friend wonders aloud if John is ever going to grow up. To act assertively, John should:

   A. Take a cigarette but not light it.

   B. Tell his friends to put out their cigarettes because they are dumb to smoke.

   C. Ignore the comment and concentrate on the football game.

   D. None of the above.

6. While at a party, Mark is talking with Ruth, an old friend. Ruth knows that Mark is trying to stop smoking, so she decides to offer Mark a cigarette to test his will power. To act assertively, Mark should:

   A. Tell Ruth that she has much less will power than he does.

   B. Accept the cigarette, saying that he will smoke it later.

   C Inform Ruth that he no longer smokes.

   D. None of the above.

7. Nancy is on a date with Tom. To impress her, Tom lights two cigarettes and offers Nancy one, saying that she will look sexy if she smokes a cigarette. To act assertively, Nancy should:

   A. Change the subject by asking Tom whether he thinks her new hairdo is attractive.

   B. Take the cigarette he offers, then hold it in her hand without smoking it for a few minutes.

   C. Turn down the offer, saying she doesn't enjoy smoking.

   D. None of the above.

8. Jim has just moved into a new neighborhood. He wants to be accepted by the other young people there. They tell Jim that he will have to smoke a pack of cigarettes without stopping before he can be admitted to their crowd. To act assertively, Jim should:

   A. Keep the crowd entertained with stories about the activities at his last school.

   B. Smoke the pack of cigarettes, inhaling as little as possible and putting out each cigarette as quickly as he can.

   C. Tell the crowd that he does not smoke because it is unhealthy.

   D. None of the above.

9. David is waiting to see his lawyer. Another man who is seated in the waiting room is smoking one cigarette after another, and the smoke is beginning to irritate David's eyes. To act assertively, David should:

   A. Close his eyes to reduce the amount of irritation from the smoke.

   B. Tell the man that the smoke is irritating his eyes and ask if he would stop smoking or go outside.

   C. Complain to the receptionist about how smoky the waiting room is getting, using a voice loud enough for the smoker to hear.

   D. None of the above.

10. Louise is standing in line at the market, waiting to check out. The woman behind her lights a cigarette and the smoke blows into Louise's face. To act assertively, Louise should:

   A. Tell the woman that she is inconsiderate.

   B. Ask the woman if she would blow the smoke in the other direction.

   C. Move to another checkout line.

   D. None of the above.

11. Michael, who does not smoke, pretended to smoke a cigarette as part of his role in a play. Afterwards, his girlfriend Jane tells him that smoking made him look more attractive. She asks him to have a cigarette at a party. To act assertively, Michael should:

   A. Tell Jane that he doesn't want to smoke in order to create an "image."

   B. Accept the cigarette and hold it but refrain from actually smoking it.

   C. Pretend that he didn't hear her and ask Jane if she would like to dance.

   D. None of the above.

12. Freida gets on a crowded elevator at the first floor of an office building. Someone smoking a cigarette also gets on and Freida finds the smoke extremely annoying. To act assertively, Freida should:

    A. Make a point of coughing loudly and fanning the smoke away from her face.

    B. Get off at the next floor and wait for another elevator.

    C. Ask the smoker to put out the cigarette as it is bothering her.

    D. None of the above.

13. Daniel shares a small, poorly ventilated office with Jean. Although smoking is not allowed in the office, Jean smokes heavily. To act assertively, Daniel should:

    A. Ask to be transferred to another department where he can work with a nonsmoker.

    B. Ask Jean to smoke less often.

    C. Ask Jean to go to the smoking area to smoke.

    D. None of the above.

14. Gwen does not smoke. Whenever her neighbor Mildred comes over to visit, she always lights a cigarette as soon as she sits down. To act assertively, Gwen should:

    A. Ask Mildred not to smoke in her house.

    B. Ask Mildred to sit by an open window when she smokes.

    C. Ignore the smoking, in the interest of maintaining their friendship.

    D. None of the above.

15. Bruce is taking a final exam. He is having a hard time working because the person next to him is smoking. To act assertively, Bruce should:

    A. Tell the person that he will be reported to the test administrator if he doesn't stop smoking.

    B. Say nothing but try harder to concentrate on the exam rather than the smoke.

    C. Ask the person to see if he can smoke fewer cigarettes for the rest of the exam period.

    D. None of the above.

SCORING KEY

SMOKING AND ASSERTIVENESS

Item	Answer
1	B
2	A
3	B
4	A
5	D
6	C
7	C
8	C
9	B
10	D
11	A
12	C
13	C
14	A
15	D

INCORRECT ANSWER CHOICE ANALYSES

The incorrect answer choices for each item are listed below using the following method of annotation:

Passive = a passive response

Aggressive = an aggressive response

Acquiescent = an acquiescent response

Non-confrontational = a non-confrontational response

None of the above = a correct response was provided

	PASSIVE	AGGRESSIVE	ACQUIESCENT	NON-CONFRONTATIONAL	NONE OF THE ABOVE
1.	-	-	-	A & C	D
2.	-	-	C	B	D
3.	C	-	-	A	D
4.	-	B	-	C	D
5.	C	B	A	-	-
6.	-	A	B	-	D
7.	-	-	B	A	D
8.	-	-	B	A	D
9.	A	-	-	C	D
10.	-	A	-	B & C	-
11.	-	-	B	C	D
12.	-	-	-	A & B	D
13.	-	-	-	A & B	D
14.	C	-	-	B	D
15.	B	A	-	C	-

DECISION-MAKING

TYPE OF MEASURE: Skill

OUTCOME ASSESSED: Using Systematic Decision-Making Skills

TARGET POPULATION: Adults or Adolescents

GENERAL DESCRIPTION:

Individuals are presented with fictional descriptions of people who are attempting to make decisions in a health-related context. Individuals are asked to select from among four options the next step to be followed using a systematic approach to decision-making.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 266-270.

DECISION-MAKING

This test presents descriptions of people who are trying to make decisions that may affect their health or the health of others.

Read each item. Circle the letter of the next step that the person should take in order to be making decisions using a systematic approach.

1. Katherine is slightly overweight and wants to go on a diet. Although she has tried to diet before, she has never had much success with the diets she has chosen. Now Katherine realizes she must choose a diet that isn't too difficult so that she will stick with it.

    She discusses her desire to find a suitable diet with one of her close friends. Together they identify several different diet plans that may be useful for Katherine. Katherine thinks about how she feels about going on a diet. She then discusses the different diets with her family doctor who points out the positive and negative features of each. They also discuss what Katherine will have to do in order to stick to each diet plan.

    What is the best thing for Katherine to do next in order to use the systematic decision-making approach?

    A. Discuss the different diets with another friend.

    B. Select one of the diets.

    C. Have her doctor select one of the diets for her.

    D. Realize that she must choose a suitable diet.

2. William started smoking many years ago, before the dangers of cigarette smoking were known. Now he recognizes that his cigarette smoking is bad for his health. Although William knows that it might be difficult, he wants to quit smoking. Some of his friends who used to smoke have already quit. William is sure that there are many different ways to stop smoking. He wants to choose the way that is right for him.

   What is the best thing for William to do next in order to use the systematic decision-making approach?

   A. Call a smoking clinic to find out about its program.

   B. Decide how he will quit smoking.

   C. Make a list of all the possible ways he can stop smoking.

   D. Think of one way he can stop smoking.

3. Cindy has been invited to a party where other people will probably be smoking marijuana. Although Cindy has never smoked marijuana, she is curious about it. She realizes that she must decide what she will do if someone at the party offers her marijuana. Cindy thinks about what she might do. After Cindy goes to the library and reads some books on marijuana, she decides not to smoke at the party. While at the party, Cindy is offered marijuana several times but turns down the offers.

   What is the best thing for Cindy to do next in order to use the systematic decision-making approach?

   A. Talk to her friends about smoking marijuana.

   B. Read more books about marijuana.

   C. Avoid the people who offered her marijuana at the party.

   D. Consider whether she's happy about her decision.

4. Martin enjoys being active and tries to exercise on the weekends. He would like to exercise every day after work. Some of his co-workers go to a gym near his office. His wife jogs every evening at the local park.

   What is the best thing for Martin to do next in order to use the systematic decision-making approach?

   A. Think of one type of exercise he enjoys.

   B. Start to jog after work.

   C. Realize he must choose a regular exercise program.

   D. Talk to his co-workers about the gym.

5. Phil works in a very busy office. He has a great deal of work to do and sometimes he is unable to complete it on time. Phil knows that he is under stress at work and he wants to find a good way to reduce it. He discusses his problem with some of his friends. He then makes a list of all the ways that he knows of to reduce stress at work.

   What is the best thing for Phil to do next in order to use the systematic decision-making approach?

   A. Get information about his ideas from the company doctor.

   B. Select one of the ideas on his list.

   C. Ask his doctor to choose a good way for him to reduce the stress at work.

   D. Realize that he must find an appropriate way to reduce the stress at work.

6. Mary wants to take her son to be immunized at a local clinic. The clinic is very busy. Her child can have an appointment only on a day when Mary has an important business meeting.

   Mary already has made a doctor's appointment in two months for her child's routine checkup. She realizes that she must decide whether to take her child to the clinic or wait and have her child immunized at the doctor's office. Mary thinks about her possibilities. She calls the doctor and the clinic to find out if it is safe to wait.

   What is the best thing for Mary to do next in order to use the systematic decision-making approach?

   A. Think about the possible choices that are available to her.

   B. Decide what to do about immunizing her son.

   C. Be aware that she must make a decision about her son's immunization.

   D. Complain to the clinic's staff that they aren't flexible enough.

7. Phyllis works for the Westinger Company. For the last few months Phyllis has been swimming during lunch hour. She enjoys the swim and is pleased with the improvement in her health and appearance.

   Her boss now wants Phyllis to attend board meetings that are held every Monday, Wednesday, and Friday at lunch time. She tells Phyllis that attending the meetings will be important for her growth in the company.

   What is the best thing for Phyllis to do next in order to use the systematic decision-making approach?

   A. Choose between swimming and attending the board meetings.

   B. Try to convince her boss that she doesn't need to attend board meetings.

   C. Talk to her boss about the decision she must make.

   D. Realize that she must decide between swimming and attending the meetings.

8. Debbie has diabetes. She keeps her diabetes under control by eating a special diet.

Debbie's new boss is having a dessert party in a few days and Debbie is invited. All of the guests are supposed to bring their favorite dessert. Debbie shouldn't eat sweets and desserts, but she doesn't want to offend her boss by turning down the invitation. Debbie realizes that she must decide whether or not to go to the party. She thinks about the options that she has and discusses them with a friend who also has diabetes. She calls her doctor to ask his advice about eating sweets just one time. She also thinks about whether she would be able to resist eating anything at the party if she went.

What is the best thing for Debbie to do next in order to use the systematic decision-making approach?

A. Decide whether to go to the party.

B. Have her doctor decide whether she should go to the party.

C. Sign up for a special baking class for people with diabetes.

D. Make a list of her possible choices.

9. Gary visits the doctor once a year for a checkup. At one checkup the doctor discovers that Gary's blood pressure is slightly higher than it should be. He wants Gary to use deep relaxation because that may lower Gary's blood pressure. If it doesn't, Gary may have to take a special medicine.

Gary recognizes that he must decide whether or not to use deep relaxation. He wants to follow his doctor's advice, but Gary understands that using relaxation may not lower his blood pressure. Gary makes a list of possible choices and the consequences.

What is the best thing for Gary to do next in order to use the systematic decision-making approach?

A. Decide whether or not he will follow his doctor's advice.

B. Talk with a friend who has high blood pressure about the effects of relaxation.

C. Realize that he has a decision to make about using relaxation.

D. Discuss the possibilities with his doctor.

10. Diane is going to make some big changes in her life soon. She will be moving to a new city to start school and she is nervous about it.

Diane has heard that changes can cause stress, but that there are ways to reduce it. She wants to choose a way to reduce some of the stress she's feeling.

What is the best thing for Diane to do next in order to use the systematic decision-making approach?

A. Start a regular exercise program.

B. Discuss with her family the possible ways she can reduce her stress.

C. Decide on a way to relieve the stress she feels.

D. Have the family doctor choose a way for her to reduce the stress.

11. Bob is quite heavy. He wants to lose weight and realizes that he must decide how he's going to do it. He discusses the situation with his wife. Together they realize that Bob will either have to go on a diet, start exercising regularly, or do both. Bob calls his doctor to get his advice. The doctor says that regular exercise may reduce Bob's appetite so that it will be easier to stay on a diet. The doctor suggests that Bob try to diet and exercise. Bob, however, doesn't enjoy exercising so he decides to go on a diet only.

Bob tries to diet for three weeks. He's unhappy because he's not losing much weight and is often hungry.

What is the best thing for Bob to do next in order to use the systematic decision-making approach?

A. Think about whether he is satisfied with his decision to lose weight by dieting.

B. Read books about weight loss.

C. Stay with his diet for at least another week.

D. Start a running program in order to follow his doctor's advice about exercising.

12. Joe drinks a great deal of alcohol. He always has many drinks after work. Lately he has been drinking when he gets up in the morning. He knows that he has a drinking problem.

What is the best thing for Joe to do next in order to use the systematic decision-making approach?

A. Enroll in an alcoholism treatment program.

B. Watch other people to see if they drink as much as he does.

C. Recognize that he must decide what to do about his drinking.

D. Realize that he will have to decide what changes to make in his life.

13. Margaret wants to stop smoking. She knows that there are many ways to quit and that she should choose the best way for her. She discusses the matter with a friend. They come up with several plans: (a) Margaret could stop smoking completely on a certain day, or (b) Margaret could slowly reduce the number of cigarettes she smokes each day until she gives them up completely. Margaret calls her doctor to ask her doctor's opinion. She also talks to other people who have already quit smoking.

Margaret decides to stop smoking gradually. At the start of every week she reduces the number of daily cigarettes she smokes by one. Unfortunately, Margaret isn't too happy with her program and she has trouble keeping track of the number of cigarettes she smokes.

What is the best thing for Margaret to do next in order to use the systematic decision-making approach?

A. Have her doctor choose a way for Margaret to stop smoking.

B. Think again about her decision to stop smoking gradually.

C. Stick with her decision regardless of how she feels about it.

D. Read some books about how to stop smoking.

14. Stan wants to get into good physical condition, even though he smokes and has not exercised in years. He is aware that there are many ways to exercise and that some ways are better than others. He wants to find an exercise program that will be comfortable and effective for him.

Stan talks to some friends to find out what they do to get and stay in shape.

What is the best thing for Stan to do next in order to use the systematic decision-making approach?

A. Decide on an exercise program.

B. Quit smoking before he starts an exercise program.

C. Read some books about the different exercises he has heard about.

D. Jog regularly because he enjoys being outside.

15. Tom has been on a low-salt, low-fat diet for several months. He is pleased with the diet, even though following it can be difficult. He does have to prepare most of his meals himself from fresh foods.

Tom has been asked to go on vacation with some friends. He wants to go but he knows that he won't be able to prepare his own meals. If he goes, he may not be able to stay on his diet very well. Tom realizes that he has a decision to make about going with his friends.

What is the best thing for Tom to do next in order to use the systematic decision-making approach?

A. Decide not to go on vacation.

B. Have his doctor decide if Tom should go with his friends.

C. Think about whether his friends would mind if he didn't go.

D. Consider the options that are available to him.

SCORING KEY
DECISION-MAKING

Item	Answer
1	B
2	C
3	D
4	C
5	A
6	B
7	D
8	A
9	D
10	B
11	A
12	C
13	B
14	C
15	D

INCORRECT ANSWER CHOICE ANALYSES

Although there may be some overlap, it may be useful to consider the incorrect answer choices for each item using the following method of annotation.

Skipped step = a response that describes one of the decision-making steps that occurs after the correct step.

Repeated step = a response that describes one of the decision-making steps that has already occurred.

Ineffective implementation of correct step = a response that describes the correct decision-making step, but violates one or more of the step's effectiveness criteria.

Ineffective implementation of incorrect step = a response that describes an incorrect decision-making step and violates one or more of the step's effectiveness criteria.

Deflective action = a response that is unrelated to effective decision-making and may deflect the decision-maker from taking necessary action.

INCORRECT ANSWER CHOICE ANALYSES (Cont.)

DECISION-MAKING

Item	Skipped Step	Repeated Step	Ineffective Implementation of Correct Step	Ineffective Implementation of Incorrect Step	Deflective Action
1		A,D	C		
2	B		D	A	
3		A,B			C
4	B,D			A	
5	B	D		C	
6		A,C			D
7	A,C				B
8		D	B		C
9	A	C	B		
10	A,C			D	
11		B	C,D		
12	A		D		B
13		D	C	A	
14	A,D				B
15	A,C			B	

SYSTEMATIC DECISION-MAKING

TYPE OF MEASURE: Skill

OUTCOME ASSESSED: Using Systematic Decision-Making Skills

TARGET POPULATION: Adults or Adolescents

GENERAL DESCRIPTION:

Individuals are presented with fictional descriptions of people who are making decisions in a health-related context. Individuals are asked to indicate whether the decision-makers correctly use the systematic decision-making process. If individuals indicate that the decision-making process is carried out incorrectly, they are then asked to describe the nature of the error.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 271-276.

SYSTEMATIC DECISION-MAKING

This test presents descriptions of people who are making decisions that may affect their health or the health of others. Each person has either completed the entire decision-making process correctly or has made one mistake in this process.

Read each item. Circle Yes or No to indicate whether the person correctly completed each step in the decision-making process. If you circle No, briefly describe what the person did wrong.

1. William started smoking many years ago, before the dangers of cigarette smoking were known. Now he recognizes that his cigarette smoking is bad for his health, and he wants to quit.

   William knows that there are many ways to stop smoking. He realizes that he must choose the way that is right for him. He thinks of some different ways to stop smoking. He then discusses his ideas with a friend who has already quit smoking. He also talks to his doctor to get his opinion on the matter.

   William chooses one of the approaches and begins to try to stop smoking. After a few weeks William's friend tells William how proud he is that William is trying to stop smoking.

   A. Did William correctly complete each of the steps in the decision-making process?

   Circle One: Yes No

   B. If No, what did William do wrong?

2. Katherine is slightly overweight and wants to go on a diet. Although she has tried many diets before, she has never had much success with them. Now Katherine realizes she must choose a diet that isn't too difficult so that she will stick with it.

   She discusses her desire to find a suitable diet with one of her close friends. Together they identify several different diet plans that may be useful for Katherine. Katherine thinks about how she feels about dieting. She then discusses the different diets with her family doctor who points out the positive and negative features of each. They also discuss what Katherine will have to do in order to stick with each diet plan. Katherine knows that the decision is difficult, so she has the doctor pick one of the diets for her.

   She starts the diet the next week, but has a hard time staying on it. Katherine realizes that she's not happy with the diet and should stop it and find a better one.

   A. Did Katherine correctly complete each of the steps in the decision-making process?

      Circle One: Yes No

   B. If No, what did Katherine do wrong?

3. Cindy has been invited to a party where other people will probably be smoking marijuana. Although Cindy has never smoked marijuana, she is curious about it.

   Cindy realizes that she must decide whether she will smoke any marijuana if she is offered some at the party. She makes a list of her available options.

   Cindy decides not to smoke at the party. While at the party, she is offered marijuana several times but turns down the offers. Later, Cindy thinks about how she felt at the party and realizes that she's happy with her decision not to smoke.

   A. Did Cindy correctly complete each of the steps in the decision-making process?

      Circle One: Yes No

   B. If No, what did Cindy do wrong?

4. Martin would like to start exercising regularly. He realizes that he must decide on an exercise program that is best for him.

Some of Martin's co-workers jog together every day after work. Martin thinks that jogging with them is the only way that he will exercise regularly. He talks to his co-workers about it. He then makes an appointment with his doctor to get his opinion about jogging.

Martin decides to jog after work with his co-workers. He starts jogging the next day. After several weeks, Martin thinks about his decision to jog. He's pleased because he is feeling good and looking fit.

A. Did Martin correctly complete each of the steps in the decision-making process?

Circle One: Yes No

B. If No, what did Martin do wrong?

5. Phil works in a very busy office. He has a great deal of work to do and sometimes he is unable to complete it on time. Phil realizes that he is under stress at work and that he should decide on a way to reduce that stress. He discusses the situation with his boss. He then makes a list of all the ways he knows that would reduce stress at work. He gets information about the ideas on his list from the company doctor.

After thinking about his decision, Phil picks one of the choices. He decides to sit quietly for a short time each day. He does this and finds that he is more relaxed and productive at work. He thinks about his decision and realizes that he has made the right choice.

A. Did Phil correctly complete each of the steps in the decision-making process?

Circle One: Yes No

B. If No, what did Phil do wrong?

6. Mary wants to take her son to be immunized at a local clinic. The clinic is very busy. Her child can have an appointment only on a day when Mary has other plans. She is part of a sales team at the Bishop Company and should attend a sales meeting that day.

   Mary already has made a doctor's appointment in two months for her child's routine checkup. She realizes that she must decide whether to take her child to the clinic or wait and have her child immunized at the doctor's office. Mary thinks about the possibilities that are available to her. She gets some information from a co-worker on the importance of the meeting and the risk involved in delaying her son's immunization.

   Mary takes her son to the clinic. Later, she considers her decision and realizes that she's happy with the way everything worked out.

   A. Did Mary correctly complete each of the steps in the decision-making process?

      Circle One: Yes No

   B. If No, what did Mary do wrong?

7. Phyllis swims during her lunch hour at work. She enjoys the swim and is pleased with the improvement in her health and appearance.

   Her boss now wants Phyllis to attend board meetings that are held every Monday, Wednesday, and Friday at lunch time. She tells Phyllis that attending the meetings will be important for her growth in the company. Phyllis realizes that she must decide between swimming at lunch time and attending the meetings. She lists her possible choices. She could either: (1) go to the meetings, (2) continue to swim at lunch, or (3) go to the meetings and swim at a different time. Phyllis talks to her boss about the meetings. She also calls several pools in the area to see when they're open.

   After thinking about her feelings on the subject, Phyllis decides to attend the meetings and swim before work. She begins this new program the following week.

   After several weeks, Phyllis thinks about her program. She realizes that she's unhappy with her choice because she doesn't like getting up so early in the morning. She understands that she needs to think again about her decision.

   A. Did Phyllis correctly complete each of the steps in the decision-making process?

      Circle One: Yes No

   B. If No, what did Phyllis do wrong?

8. Debbie has diabetes. She keeps her diabetes under control by eating a special diet.

Debbie's new boss is having a dessert party in a few days and Debbie is invited. Debbie shouldn't eat sweets and desserts, but she doesn't want to offend her boss by turning down the invitation. Debbie realizes that she must decide what to do about the party. She makes a list of the options that are available to her.

Debbie decides that she will go to the party and only eat a small amount of sweets. She doesn't think it will hurt her.

After the party, Debbie thinks about her decision to eat some of the desserts. She thinks that she might have made a mistake because her sugar levels were irregular for several days afterwards.

A. Did Debbie correctly complete each of the steps in the decision-making process?

Circle One: Yes No

B. If No, what did Debbie do wrong?

9. Gary visits the doctor once a year for a checkup. At one checkup the doctor discovers that Gary's blood pressure is slightly higher than it should be. He wants Gary to use deep relaxation because that may lower Gary's blood pressure. If it doesn't, Gary may have to take a special medicine.

Gary recognizes that he must decide whether or not to use deep relaxation. He wants to follow his doctor's advice, but Gary understands that using relaxation may not lower his blood pressure. Gary thinks about his possible choices and the consequences. He discusses the matter with the doctor. He also talks to his family about his decision.

Gary decides that he will follow his doctor's advice and use deep relaxation. He starts learning relaxation the following week. Gary's doctor calls him six weeks later to see how Gary is doing.

A. Did Gary correctly complete each of the steps in the decision-making process?

Circle One: Yes No

B. If No, what did Gary do wrong?

10. Diane is going to make some big changes in her life soon. She will be moving to a new city to start school and she is nervous about it.

Diane has heard that changes can cause stress, but that there are ways to reduce it. She realizes that she must decide on a way to reduce some of the stress she's feeling. Diane talks to her friend Mitch to find out what he does to feel better when he's under stress. She finds out that Mitch runs every day. Diane thinks that regular running is probably the only way to reduce stress so she talks to her doctor about it. The doctor gives Diane some information about running and its benefits.

Diane decides to start running. She begins the program the next day.

Several weeks later, Diane considers her decision. She realizes that she's feeling less nervous and is happy with her decision to run daily.

A. Did Diane correctly complete each of the steps in the decision-making process?

Circle One: Yes No

B. If No, what did Diane do wrong?

11. Bob is quite heavy. He wants to lose weight and realizes that he must decide how he's going to do it. He discusses the situation with his wife. Together they identify several plans. Bob will either have to go on a diet, start exercising regularly, or do both. Bob then calls his doctor who points out that regular exercise can reduce a person's appetite. He says that it may be easier for Bob to stay on a diet if he exercises regularly.

    Bob asks his wife to decide which plan he should use. She tells Bob that he should diet, but not exercise. Bob tries to diet for three weeks. He's unhappy because he's not losing much weight and is often hungry. He thinks about whether he's satisfied with the decision to lose weight by dieting.

    A. Did Bob correctly complete each of the steps in the decision-making process?

    Circle One: Yes No

    B. If No, what did Bob do wrong?

12. Joe drinks a great deal of alcohol. He always has quite a few drinks when he gets home from work. Joe knows that he has a drinking problem. He recognizes that he must decide what to do about it.

    Joe discusses the situation with a close friend. They make a list of the different things Joe could do to deal with the problem. Joe could: (1) get professional help, (2) try on his own to reduce the amount he drinks, or (3) do nothing about the problem.

    Joe decides to try on his own to limit the amount he drinks. He will have no more than two drinks when he gets home from work.

    Joe begins this new program, but he finds it more difficult than he expected. He thinks that he may not have made the right choice and reconsiders his decision.

    A. Did Joe correctly complete each of the steps in the decision-making process?

    Circle One: Yes No

    B. If No, what did Joe do wrong?

13. Margaret wants to stop smoking. She knows that there are many ways to quit and that she should choose the best way for her. She discusses the matter with a friend. They come up with two plans: (1) Margaret could stop smoking completely on a certain day, or (2) Margaret could slowly reduce the number of cigarettes she smokes each day until she gives them up completely. Margaret calls her doctor to ask her doctor's opinion. She also talks to other people who have already quit smoking.

Margaret decides to stop smoking gradually. At the start of every week she reduces the number of daily cigarettes she smokes by one. Unfortunately, Margaret isn't too happy with her program and she has trouble keeping track of the number of cigarettes she smokes. She thinks again about her decision to stop smoking gradually.

A. Did Margaret correctly complete each of the steps in the decision-making process?

Circle One: Yes No

B. If No, what did Margaret do wrong?

14. Stan wants to get into good physical condition, even though he has not exercised in years. He wants to decide on an exercise program that will be comfortable and effective for him.

    Stan talks to his co-workers to find out what they do to get and stay in shape. He finds out that most of them either swim, jog or play tennis regularly. Stan thinks about what he might enjoy doing. He then talks to a good friend who tells Stan about the health effects of exercise.

    Stan starts swimming several times a week. He thinks he's made the right decision because he's getting stronger and more energetic.

    A. Did Stan correctly complete each of the steps in the decision-making process?

    Circle One: Yes No

    B. If No, what did Stan do wrong?

15. Tom has been on a low-salt, low-fat diet for several months. He is pleased with the diet, even though following it can be difficult. He does have to prepare most of his meals himself from fresh foods.

Tom has been asked to go on vacation with some friends. He wants to go but he knows that he won't be able to prepare his own meals. If he goes, he may not be able to stay on his diet very well. Tom realizes that he has a decision to make about vacationing with his friends. He considers the options that are available to him. Tom then talks to his doctor to get his advice on the matter. He also calls the hotel where his friends plan to stay, to see if special meal arrangements are possible. After thinking about whether his friends would mind if he didn't go, Tom decides to go on the vacation.

Several weeks later, some of Tom's friends invite him to their house to look at pictures from the trip.

A. Did Tom correctly complete each of the steps in the decision-making process?

Circle One: Yes No

B. If No, what did Tom do wrong?

SCORING KEY

SYSTEMATIC DECISION-MAKING

Point values are assigned to responses as follows:

1 point : A Yes response in part A, if each of the steps in the systematic decision-making process has been completed correctly. If one of the steps in the systematic decision-making process has been omitted or completed incorrectly, one point should be awarded if this is indicated by a No response in part A and a constructed response that accurately identifies the nature of the error. This constructed response must indicate either what was done incorrectly or what should have been done. Steps can be identified by using the title or label of the step, or by providing a specific exemplar of the step.

0 points: Any response that is not acceptable according to the above criteria.

Guidelines for correct responses by item are indicated below:

Item	Response A	Response B
1	No	Skip: Evaluates the decision.
2	No	Incorrect Implementation: Makes/implements the decision.
3	No	Skip: Gathers/processes information.
4	No	Incorrect Implementation: Identifies possible decision options.
5	Yes	
6	No	Incorrect Implementation: Gathers/processes information.
7	Yes	
8	No	Skip: Gathers/processes information.
9	No	Skip: Evaluates the decision.
10	No	Incorrect Implementation: Identifies possible decision options.
11	No	Incorrect Implementation: Makes/implements the decision.
12	No	Skip: Gathers/processes information.
13	Yes	
14	No	Incorrect Implementation: Gathers/processes information.
15	No	Skip: Evaluates the decision.

MAKING DECISIONS

TYPE OF MEASURE: Skill

OUTCOME ASSESSED: Using Systematic Decision-Making Skills

TARGET POPULATION: Elementary school children

GENERAL DESCRIPTION:

Children are presented with fictional descriptions of young people who are attempting to make decisions in a health-related context. Children are asked to select from among three options the next step to be followed using a systematic approach to decision-making.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 277-280.

MAKING DECISIONS

This test is about young people who are trying to make decisions.

Read each story. Circle the letter of the next thing that the person should do in order to be making a decision in the best way.

1. Ken is unhappy because he is heavy. He needs to lose weight and understands that there are many different ways to do it. Ken knows that he must decide on a way to lose weight that is best for him.

   What should Ken do next in order to be making a decision in the best way?

   A. Make a list of ways to lose weight.

   B. Decide how he will lose weight.

   C. Start a diet.

2. Katie has been going swimming with her best friend every day after school. Katie enjoys it very much. Now Katie's music teacher wants Katie to be in the school band. Band practice is held after school every day from 3:30 - 5:00 o'clock. The pool where Katie swims is only open from 3:00 - 5:00 o'clock.

   What should Katie do next in order to be making a decision in the best way?

   A. Keep swimming because she likes it so much.

   B. Know that she must decide whether to join the band or continue to swim at the pool.

   C. Have her best friend decide whether she should continue to swim or join the band.

3. Karen has diabetes and should not eat sweet foods. She is invited to her friend Anne's birthday party. There will be cake and ice cream at the party. Karen wants to go but she thinks that it might be hard not to eat any of the sweets. Karen knows that she must decide what she should do about the party.

   She talks to her mother about the problem. Together they make a list of things that Karen could do: (1) Karen could go to the party after the other children finish eating, (2) Karen could eat some sweets at the party, or (3) Karen could eat something besides cake and ice cream at the party.

   What should Karen do next in order to be making a decision in the best way?

   A. Decide what to do about the party.

   B. Call Anne and a nurse at her doctor's office to get information.

   C. Have Anne decide what Karen should do about going to the party.

4. Joe and his family have just moved to a new city. Joe will be starting at a new school soon. Joe is feeling nervous because of all the changes, and wants to find a way to feel better.

   He talks to his older brother about his problem. They think of several different things Joe could do to feel less nervous. Joe could swim at the neighborhood pool after school or spend a little time each day sitting quietly.

   Joe calls to find out what time the pool is open. He talks to his family about whether he could have a room to himself for quiet time. Joe also thinks about what might make him feel best.

   What should Joe do next in order to be making a decision in the best way?

   A. Make a list of all the possible ways to feel less nervous.

   B. Try not to think about how nervous he feels.

   C. Decide whether he wants to swim or have quiet time after school.

5. Margaret has been invited to a party. She thinks that some of the children might have marijuana at the party. Margaret has never smoked marijuana, but she thinks that she might be asked to try some.

Margaret knows that she must decide what she will do if someone at the party offers her marijuana. She thinks about whether or not she will smoke it at the party. She goes to the school library to get some information about marijuana. Margaret also thinks about what her friends would think if she smokes marijuana.

What should Margaret do next in order to be making a decision in the best way?

A. Understand that she will have to decide whether to smoke marijuana at the party.

B. Ask her friends if they have gone to any parties lately.

C. Decide whether she wants to smoke marijuana at the party.

6. Harold wants to start some kind of team sport. He knows that there are many different sports to choose from. He wants to decide on a sport that he can be good at and will enjoy.

Harold talks to his father about his idea. Together they make a list of all the different team sports that Harold might like to play. Then Harold talks to his physical education teacher to see which sports on the list he thinks Harold might be good at. Harold also thinks about which sport he should pick.

Harold decides that he would like to play basketball. He signs up for the team and starts practicing every day after school.

What should Harold do next in order to be making a decision in the best way?

A. Know that he must choose a sport.

B. Think about whether he's happy with his decision to play basketball.

C. Have a party for the basketball team.

7. Mike has been asked to spend the night with his friend Phil next Friday. Phil told Mike that his parents will be out that evening and that he has some cigarettes they can smoke. Although some of Mike's friends have started smoking, Mike has never smoked a cigarette before.

What should Mike do next in order to be making a decision in the best way?

A. Know that he must decide whether he will smoke cigarettes.

B. Talk to his parents about smoking.

C. Plan on smoking just one cigarette with Phil.

8. Tom goes to the park almost every afternoon to play. Some of his friends have started drinking beer at the park. One of them told Tom that he could try a little beer the next time they have some. Tom has never had any beer, but he has wondered what it's like.

Tom knows that he must decide whether or not he wants to drink any beer. He thinks about the different things he might do. He asks some questions in his health class about drinking. He also thinks about how his parents would feel if they found out. He decides to try some beer because he doesn't want his friends to think he's scared.

The next time Tom is in the park he drinks beer with his friends.

What should Tom do next in order to be making a decision in the best way?

A. Avoid going to the park.

B. Understand that his friends were wrong to ask him to drink with them.

C. Think about how he feels about his decision to drink beer.

9. Carol just went to her doctor. The doctor told Carol and her mother that Carol is too heavy and needs to go on a diet. Carol thinks that a diet will be good for her.

Carol understands that there are many diets she might choose. She knows that she needs to pick the diet that is best for her.

Carol and her mother talk about different diets and make a list of them.

What should Carol do next in order to be making a decision in the best way?

A. Talk about the diets on her list with her doctor.

B. Decide on one of the diets.

C. Ask her mother to pick one of the diets for her.

10. Donna is upset about a big test she must take next week. Although she has been studying, she still feels nervous about the test.

Donna's teacher has told her that there are many things a person can do to feel less nervous. Donna wants to find something that she can do to feel better about the test.

What should Donna do next in order to be making a decision in the best way?

A. Ask her parents to help her study for the test.

B. Talk to her teacher about all the things she can do to feel less nervous.

C. Decide to sit quietly right before the test.

SCORING KEY
MAKING DECISIONS

Item	Answer
1	A
2	B
3	B
4	C
5	C
6	B
7	A
8	C
9	A
10	B

INCORRECT ANSWER CHOICE ANALYSES

Although there may be some overlap, it may be useful to consider the incorrect answer choices for each item using the following method of annotation.

Skipped step = a response that describes one of the decision-making steps that occurs after the correct step.

Repeated step = a response that describes one of the decision-making step that has already occurred.

Ineffective implementation of a step = a response that describes a decision-making step but is clearly inconsistent with one or more of the step's described characteristics.

Deflective action = a response that is unrelated to effective decision-making and may deflect the decision-maker from taking necessary action.

	Skipped Step	Repeated Step	Ineffective Implementation of a Step	Deflective Action
1	B,C			
2	A		C	
3	A		C	
4				B
5		A		B
6		A		C
7	B,C			
8				A,B
9	B,C			
10	A			C

MAKE A DECISION

TYPE OF MEASURE: Skill

OUTCOME ASSESSED: Using Systematic Decision-Making Skills

TARGET POPULATION: Elementary school children

GENERAL DESCRIPTION:

Children are presented with fictional descriptions of young people who are attempting to make decisions in a health-related context. Children are then asked to write a description of the next step to be followed using a systematic approach to decision-making.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 281-285.

MAKE A DECISION

This test is about young people who are trying to make decisions.

Read each story. Then write what the person should do next in order to be making a decision in the best way.

1. Ken is unhappy because he is heavy. He needs to lose weight and understands that there are many different ways to do it. Ken knows that he must decide on a way to lose weight that is best for him.

   What should Ken do next in order to be making a decision in the best way?

2. Katie has been going swimming with her best friend every day after school. Katie enjoys it very much. Now Katie's music teacher wants Katie to be in the school band. Band practice is held after school every day from 3:30 - 5:00 o'clock. The pool where Katie swims is only open from 3:00 to 5:00 o'clock.

   What should Katie do next in order to be making a decision in the best way?

3. Karen has diabetes and should not eat sweet foods. She is invited to her friend Anne's birthday party. There will be cake and ice cream at the party. Karen wants to go but she thinks that it might be hard not to eat any of the sweets. Karen knows that she must decide what she should do about the party.

   She talks to her mother about the problem. Together they make a list of things that Karen could do: (1) Karen could go to the party after the other children finish eating, (2) Karen could eat some sweets at the party, or (3) Karen could eat something besides cake and ice cream at the party.

   What should Karen do next in order to be making a decision in the best way?

4. Joe and his family have just moved to a new city. Joe will be starting at a new school soon. Joe is feeling nervous because of all the changes, and wants to find a way to feel better.

   He talks to his older brother about his problem. They think of several different things Joe could do to feel less nervous. Joe could swim at the neighborhood pool after school or spend a little time each day sitting quietly.

   Joe calls to find out what time the pool is open. He talks to his family about whether he could have a room to himself for quiet time. Joe also thinks about what might make him feel best.

   What should Joe do next in order to be making a decision in the best way?

5. Margaret has been invited to a party. She thinks that some of the children might have marijuana at the party. Margaret has never smoked marijuana, but she thinks that she might be asked to try some.

Margaret knows that she must decide what she will do if someone at the party offers her marijuana. She thinks about whether or not she will smoke it at the party. She goes to the school library to get some information about marijuana. Margaret also thinks about what her friends would think if she smokes marijuana.

What should Margaret do next in order to be making a decision in the best way?

6. Harold wants to start some kind of team sport. He knows that there are many different sports to choose from. He wants to decide on a sport that he can be good at and will enjoy.

Harold talks to his father about his idea. Together they make a list of all the different team sports that Harold might like to play. Then Harold talks to his physical education teacher to see which sports on the list he thinks Harold might be good at. Harold also thinks about which sport he should pick.

Harold decides that he would like to play basketball. He signs up for the team and starts practicing every day after school.

What should Harold do next in order to be making a decision in the best way?

7. Mike has been asked to spend the night with his friend Phil next Friday. Phil told Mike that his parents will be out that evening and that he has some cigarettes they can smoke. Although some of Mike's friends have started smoking, Mike has never smoked a cigarette before.

What should Mike do next in order to be making a decision in the best way?

8. Tom goes to the park almost every afternoon to play. Some of his friends have started drinking beer at the park. One of them told Tom that he could try a little beer the next time they have some. Tom has never had any beer, but he has wondered what it's like.

Tom knows that he must decide whether or not he wants to drink any beer. He thinks about the different things he might do. He asks some questions in his health class about drinking. He also thinks about how his parents would feel if they found out. He decides to try some beer because he doesn't want his friends to think he's scared.

The next time Tom is in the park he drinks beer with his friends.

What should Tom do next in order to be making a decision in the best way?

9. Carol just went to her doctor. The doctor told Carol and her mother that Carol is too heavy and needs to go on a diet. Carol thinks that a diet will be good for her.

   Carol understands that there are many diets she might choose. She knows that she needs to pick the diet that is best for her.

   Carol and her mother talk about different diets and make a list of them.

   What should Carol do next in order to be making a decision in the best way?

10. Donna is upset about a big test she must take next week. Although she has been studying, she still feels nervous about the test.

    Donna's teacher has told her that there are many things a person can do to feel less nervous. Donna wants to find something that she can do to feel better about the test.

    What should Donna do next in order to be making a decision in the best way?

SCORING KEY

MAKE A DECISION

Point values are assigned to responses as follows:

1 point: A response that correctly identifies the next step of the decision-making process. If the last step described in the stimulus is either "identifies possible decision options" or "gathers/thinks about information", one point can also be awarded for continuation of that step. One point should be awarded for repetition of early steps only if a rationale is provided that would justify returning to an earlier step. Steps can be identified by the title or label of the step, or by providing a specific exemplar of the step.

0 points: Any response that is not acceptable according to the above guidelines.

Appropriate next steps by item are indicated below:

Item	Appropriate Next Step
1	Identifies possible decision options.
2	Identifies the decision to be made.
3	Gathers/thinks about information.
4	Makes/carries out the decision.
5	Makes/carries out the decision.
6	Evaluates the decision.
7	Identifies the decision to be made.
8	Evaluates the decision.
9	Gathers/thinks about information.
10	Identifies possible decision options.

COMMUNICATING ABOUT SMOKING

TYPE OF MEASURE: Skill

OUTCOME ASSESSED: Interpersonal Relationships: Effective Communication Techniques

TARGET POPULATION: Adults or Adolescents

GENERAL DESCRIPTION:

Individuals are presented with descriptions of fictitious persons who want either to express their feelings about their efforts to stop smoking or to request assistance with their stop smoking efforts. Individuals are asked to select from among three statements the one that most clearly and directly communicates the fictitious person's message, or to indicate that none of the suggested statements is appropriate.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 286-289.

COMMUNICATING ABOUT SMOKING

This test presents descriptions of people who are trying to stop smoking. They each have a message about smoking that they want to communicate to another individual.

Read each item. Then circle the letter of the choice that expresses the person's message clearly and directly. If there is no clear and direct response presented, circle choice D, "None of the above."

1. Michael wants to communicate to his friend that he gets nervous and has a hard time not smoking while driving through heavy traffic. The most clear and direct way for Michael to say this is:

   A. "I get really anxious when I have to drive in heavy traffic."

   B. "I get very nervous driving in heavy traffic and it's really hard not to smoke."

   C. "I can't possibly drive home through this traffic without smoking at least one cigarette."

   D. None of the above.

2. Martha feels depressed when she thinks about quitting smoking and giving up the pleasure she gets from cigarettes. The most clear and direct way for Martha to say this is:

   A. "You know how I feel about quitting cigarettes and giving up the pleasure of smoking."

   B. "I'm sure everyone feels sad when they think about giving up the pleasure of smoking."

   C. "I get depressed when I realize I'll have to go without the pleasure of smoking."

   D. None of the above.

3. Reggie wants to tell his wife that he feels good about himself because he didn't smoke when he was with some friends who were smoking. The most clear and direct way for Reggie to say this is:

   A. "I feel good about myself because I didn't smoke even though I was out with a group of smokers."

   B. "I realize how foolish my friends are when I'm not smoking and they still are."

   C. "You can imagine how I feel after going without a cigarette for the whole evening."

   D. None of the above.

4. Joyce wants to tell her husband that she feels happy about being able to turn down a cigarette that was offered to her during an important interview. The most clear and direct way for Joyce to say this is:

   A. "Now I'll never again have to worry about taking a cigarette when I'm in a tight spot."

   B. "You know what it means to me to have turned down that cigarette during the interview."

   C. "They offered me a cigarette during the interview and I turned it down."

   D. None of the above.

5. Mark wants to tell his friend that he feels deprived when he goes without his usual after dinner cigarette. The most clear and direct way for Mark to say this is:

   A. "Everyone knows that a good meal isn't really complete unless you can have a cigarette afterwards."

   B. "I feel like I've missing something special when I don't have a cigarette after a good meal."

   C. "I'll always need to have a cigarette after dinner or else I won't be able to enjoy the meal."

   D. None of the above.

6. Janice wants to ask her roommate not to smoke when they watch television together in the evenings. Seeing her roommate smoke makes it hard for Janice to keep from smoking. The most clear and direct way for Janice to say this is:

   A. "It's not very considerate of you to smoke in front of me when you know I'm trying to quit."

   B. "You can imagine how difficult it is for me not to smoke if you smoke while we watch television."

   C. "I'm uncomfortable when I watch television with you."

   D. None of the above.

7. Bruce sometimes asks James for a cigarette when he feels a strong urge to smoke. In order to quit smoking, he now wants to ask James to refuse to give him cigarettes, even if he should ask for them. The most clear and direct way for Bruce to say this is:

   A. "Please don't give me cigarettes because you know how it is when you're trying to fight the urge to smoke."

   B. "When people try to quit smoking, it helps if their friends refuse to give them cigarettes."

   C. "Please help me quit smoking by not giving me any more cigarettes, even if I ask for them."

   D. None of the above.

8. Geraldine wants to ask her husband to help her stop smoking by keeping track of the number of cigarettes she smokes when they are together. The most clear and direct way for Geraldine to say this is:

   A. "I would like you to help me smoke less by keeping track of the cigarettes I smoke when we're together."

   B. "Please help me stop smoking."

C. "If you really care about my health, you'll help me keep track of how much I smoke."

D. None of the above.

9. Steve wants to ask his wife to help him stop smoking by not smoking in front of him at the table after dinner. The most clear and direct way for Steve to say this is:

A. "You're not being very sensitive to my needs if you continue to smoke at the dinner table."

B. "People can't be expected to quit smoking when others light up right in front of them at the dinner table."

C. "I think we can make our mealtime more enjoyable."

D. None of the above.

10. Susan has a difficult time keeping from smoking when she goes to a party and sees her friends smoking. The most clear and direct way for Susan to say this is:

A. "True friends wouldn't smoke when I'm around."

B. "You can tell how uncomfortable I feel at parties when I'm around smokers."

C. "I have a hard time not smoking when I see my friends smoking at a party."

D. None of the above.

11. Eddie is trying to quit smoking. He feels anxious when he goes bowling because all the other members of his bowling team smoke. The most clear and direct way for Eddie to say this is:

A. "I feel uncomfortable when I go bowling now."

B. "I feel nervous when I go bowling with my friends because they all smoke."

C. "I guess I'll just have to smoke when I go bowling."

D. None of the above.

12. Julie feels good about not smoking while talking to her friend on the telephone. The most clear and direct way for Julie to say this is:

    A. "I'm happy that I haven't smoked while I've been talking on the telephone."

    B. "You can imagine how happy I am about not smoking while I've been on the telephone."

    C. "Not many people can talk on the telephone without smoking."

    D. None of the above.

13. Roger is pleased that he has learned to use relaxation skills instead of having a cigarette when he's upset about work. The most clear and direct way for Roger to say this is:

    A. "I'm really glad that I've learned how to relax."

    B. "People should use relaxation, instead of cigarette smoking, as a way to deal with their anger."

    C. "I'm happy that I've learned to replace cigarette smoking with relaxation when I'm upset about work."

    D. None of the above.

14. Maureen is trying to stop smoking and is upset because her friend often offers her a cigarette. The most clear and direct way for Maureen to say this is:

    A. "You're really unkind to offer me a cigarette when I'm trying to stop smoking."

    B. "People shouldn't offer cigarettes to others who are trying to stop smoking."

    C. "I am angry with you."

    D. None of the above.

15. Denise is happy because she has learned to knit instead of smoke cigarettes when she watches television. The most clear and direct way for Denise to say this is:

    A. "I won't ever need to smoke again."

    B. "I'm pleased that I've been able to replace smoking with knitting when I watch television."

    C. "I'm sure you can understand how happy I am about not smoking while watching television."

    D. None of the above.

SCORING KEY
COMMUNICATING ABOUT SMOKING

ANSWER KEY

Item	Answer	Item	Answer
1	B	9	D
2	C	10	C
3	A	11	B
4	D	12	A
5	B	13	C
6	D	14	D
7	C	15	B
8	A		

INCORRECT ANSWER CHOICE ANALYSES

The incorrect answer choices for each item are listed below using the following method of annotation:

Overgeneralized - a response that extends a single experience to all experiences or always associates a particular behavior with certain circumstances.

Crystal Ball - a response in which the assumption is made that the receiver already knows the sender's feelings or the content of the message.

Judgment - a response that blames or criticizes.

Incomplete - a response that does not provide all the information needed to send a complete message.

None of the above - a response that indicates that there is no correct answer when there is a correct answer.

	Overgeneralized	Crystal Ball	Judgment	Incomplete	None of the above
1	C			A	D
2	B	A			D
3		C	B		D
4	A	B		C	
5	A, C				D
6		B	A	C	
7	B	A			D
8			C	B	D
9	B		A	C	
10		B	A		D
11	C			A	D
12	C	B			D
13	B			A	D
14	B		A	C	
15	A	C			D

TALKING ABOUT SMOKING

TYPE OF MEASURE: Skill

OUTCOME ASSESSED: Interpersonal Relationships: Effective Communication Techniques

TARGET POPULATION: Elementary school children

GENERAL DESCRIPTION:

Children are presented with descriptions of fictitious persons who want either to express their feelings about not smoking or to tell others that they don't wish to smoke. Children are to select from among three statements the one that most clearly and directly communicates the fictitious person's message.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 290-292.

TALKING ABOUT SMOKING

This test is about young people who want to tell how they feel about smoking cigarettes. Read about each person. Then choose the most clear and direct way of saying what the person wants to tell. Circle the letter of this choice.

1. Mark and Bill are walking home from school together. Bill finds a pack of cigarettes and asks Mark to smoke some with him. Mark wants to tell Bill that he doesn't want to smoke the cigarettes. The most clear and direct way for Mark to say this is:

   A. "You know I don't like to smoke cigarettes."

   B. "You must be crazy if you think I want to smoke cigarettes with you."

   C. "I really don't want to smoke cigarettes."

2. Mike wants to tell his father that he feels good about not smoking at a party, even though his friends were smoking. The most clear and direct way for Mike to say this is:

   A. "I didn't smoke at the party."

   B. "I feel great because I didn't smoke, even though my friends were smoking at the party."

   C. "You can imagine how good I feel about not smoking at a party where my friends were smoking."

3. Kathy and Jane are at the movies. Jane asks Kathy to smoke a cigarette to see if they can get away with it. Kathy wants to tell Jane that she is not interested in smoking at the movies. The most clear and direct way for Kathy to say this is:

   A. "I don't want to smoke in here."

   B. "People shouldn't smoke in the movies because it's not allowed."

   C. "Smoking in the movies is dumb."

4. Marsha wants to tell her friend that she is proud of herself for not even wanting to smoke cigarettes. The most clear and direct way for Marsha to say this is:

   A. "People who don't smoke cigarettes should feel good about themselves."

   B. "I feel good about myself because I'm not interested in smoking cigarettes."

   C. "I don't even want to smoke cigarettes."

5. Louis has been invited to a party where he thinks that other people might be smoking. He wants to tell his brother that he's worried about the others making fun of him for not smoking. The most clear and direct way for Louis to say this is:

   A. "I'm worried about going to that party."

   B. "I guess I'll always be afraid that people will make fun of me for not smoking."

   C. "I'm afraid that the other people at the party will laugh at me because I don't smoke cigarettes."

6. Marilyn thinks it will be fun to smoke cigarettes with her sister Karen after their parents are asleep. Karen wants to tell Marilyn that she won't smoke because she doesn't like it. The most clear and direct way for Karen to say this is:

   A. "I don't want to smoke because I don't enjoy it."

   B. "If you think smoking is fun, you must not have much excitement in your life."

   C. "I don't think smoking is that much fun."

7. Valerie wants to tell her mother that she feels bad because some of her classmates called her names when she didn't take a puff from a cigarette they found. The most clear and direct way for Valerie to say this is:

   A. "I don't like to be called names."

B. "I feel bad because some of my classmates called me names for not wanting to smoke with them."

C. "You can see how bad I feel about being called names just because I didn't want to smoke."

8. Rosy's friend thinks that they'll look older if they smoke cigarettes. Rosy wants to tell her friend that she doesn't wish to smoke, whether or not it makes her look older. The most clear and direct way for Rosy to say this is:

A. "You're foolish if you think I would smoke cigarettes just to look older."

B. "I don't want to look older."

C. "Even if it does help me look older, I'm not interested in smoking."

9. Nick wants to tell his brother that he feels good because he didn't smoke while he was at a baseball game with some other children who were smoking. The most clear and direct way for Nick to say this is:

A. "I feel good because I didn't smoke at the game even though I was with people who were smoking."

B. "You must be blind not to see how good I feel about not smoking while I was at the game."

C. "People shouldn't smoke even if they're around others who are smoking."

10. Barry wants to tell his mother that he feels nervous because a neighbor said that Barry can be in the neighborhood club only if he smokes cigarettes. The most clear and direct way for Barry to say this is:

A. "I am anxious about what one of the neighbors told me."

B. "I feel anxious because I must smoke cigarettes in order to be in the neighborhood club."

C. "Can't you see how nervous I am about having to smoke in order to be in that club?"

SCORING KEY

TALKING ABOUT SMOKING

Item	Answer
1	C
2	B
3	A
4	B
5	C
6	A
7	B
8	C
9	A
10	B

INCORRECT ANSWER CHOICE ANALYSES

The incorrect answer choices for each item are listed below using the following method of annotation.

Overgeneralized - a response that extends a single experience to all experiences or always associates a particular behavior with certain circumstances.

Crystal Ball - a response in which the assumption is made that the receiver already knows the sender's feelings or the contents of the message.

Judgment - a response that blames or criticizes.

Incomplete - a response that does not provide all the information needed to send a complete message.

	Overgeneralized Message	Crystal Ball Message	Judgment Message	Incomplete Message
1		A	B	
2		C		A
3	B		C	
4	A			C
5	B			A
6			B	C
7		C		A
8			A	B
9	C		B	
10		C		A

RESPONDING TO OTHERS ABOUT SMOKING

TYPE OF MEASURE:	Skill
OUTCOME ASSESSED:	Interpersonal Relationships: Effective Response Techniques
TARGET POPULATION:	Adults or Adolescents

GENERAL DESCRIPTION:

Individuals are presented with statements by fictitious persons. The statements either express a person's feelings about efforts to stop smoking or request assistance with stop smoking efforts. Individuals are to select from among four statements the one response that best communicates acceptance and understanding of the fictitious person's situation.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 293-295.

RESPONDING TO OTHERS ABOUT SMOKING

This test presents statements by individuals who want to communicate their feelings about smoking. Read each statement. Then circle the letter of the response that best communicates acceptance and understanding of the message.

1. Dan: "I'm trying not to smoke, but I feel left out when I'm with my friends and they are all smoking."

The response that best communicates acceptance and understanding of Dan's situation is:

A. "You should probably find a new group of friends who are nonsmokers."

B. There's no reason to feel left out just because you're not smoking and others are."

C. "You feel left out when people around you are smoking and you are not."

D. "You smoke in order to be accepted by others."

2. Doris: "I'm pleasantly surprised to find I can still enjoy a cup of coffee even if I'm not smoking a cigarette."

The response that best communicates acceptance and understanding of Doris' situation is:

A. "It was foolish of you to assume that your enjoyment of coffee depended on smoking a cigarette."

B. "You're pleased to find out that quitting smoking hasn't changed your enjoyment of coffee."

C. "The next thing you should try is going without an after dinner cigarette."

D. "Smoking is still bad for you unless you give it up completely."

3. Patrick: "I feel like I can't start the day if I don't have my morning cigarette."

   The response that best communicates acceptance and understanding of Patrick's situation is:

   A. "You know you don't need a cigarette to start your day."

   B. "You should get out of bed and run around the block to wake up in the morning."

   C. "If you give in to your urge to smoke in the morning, you'll be right back where you started."

   D. "You find it difficult to start the day when you go without smoking a cigarette."

4. Janet: "I get nervous and feel as if I need something to do when I'm at a party now that I don't smoke."

   The response that best communicates acceptance and understanding of Janet's situation is:

   A. "You get nervous at social gatherings since you quit smoking."

   B. "You used to use smoking as a crutch and hide your nervousness behind a cigarette."

   C. "Try eating something to keep your mind off of smoking."

   D. "You never should have smoked at parties in the first place."

5. Kenneth: "I used to think that smoking during my work breaks helped me relax, but now that I've quit smoking I go back to work even more relaxed."

   The response that best communicates acceptance and understanding of Kenneth's situation is:

   A. "The next thing you should do is try to stop smoking at home."

B. "The problem was that you jumped to the conclusion that smoking helped you to relax."

C. "It's ridiculous to think that smoking can help a person relax."

D. "You've found out that by giving up smoking at work you've made your breaks even more relaxing."

6. Paula: "I would like to spend the evening at home tonight because if we go out with our friends who smoke, I'll want to smoke too."

The response that best communicates acceptance and understanding of Paula's situation is:

A. "You don't have enough will power around people who smoke."

B. "You feel that around smokers, you'll get an urge to smoke, so tonight you'd rather we stayed home."

C. "There's no reason for you to smoke, even if your friends are."

D. "You'll be sorry if you let our friends tempt you to start smoking again."

7. Robert: "Whenever I see your cigarettes lying around the apartment, I'm tempted to smoke one."

The response that best communicates acceptance and understanding of Robert's situation is:

A. "You are tempted to smoke when you see cigarettes."

B. "Go to a different room when you see cigarettes lying around."

C. "Think about how dangerous smoking is whenever you feel the urge to smoke."

D. "You can't be serious about quitting if you're tempted to smoke every time you see a cigarette package."

8. Alan: "You could be very helpful by refusing to give me a cigarette tonight at the party, even if I ask you for one."

The response that best communicates acceptance and understanding of Alan's situation is:

A. "You don't need my help to keep you from smoking tonight."

B. "Stay away from all the smokers at the party tonight."

C. "You'll be sorry if you just rely on me to keep you from smoking."

D. "You want me to help you tonight by turning down your requests for cigarettes."

9. Gwen: "When you light a cigarette, the smell of the smoke makes me want a cigarette."

The response that best communicates acceptance and understanding of Gwen's situation is:

A. "If you give in even once, it will be harder to resist the next time."

B. "When you smell the smoke, just tell yourself that cigarettes don't taste as good as they smell."

C. "You feel as if you would like a cigarette when you smell my cigarette smoke."

D. "There's no reason for you to want a cigarrete just because I'm having one."

10. Marcia: "Whenever I go to lunch with my friends, I have a hard time not smoking because they all smoke."

The response that best communicates acceptance and understanding of Marcia's situation is:

A. "Go to lunch with nonsmokers."

B. "You find it hard to avoid smoking when your friends smoke at lunch."

C. "You should try not to go to lunch with those friends."

D. "You must need approval from your friends if you need to smoke when they do."

11. Tom: "I've been happier since I started taking walks after dinner instead of smoking."

The response that best communicates acceptance and understanding of Tom's situation is:

A. "You feel better since you've replaced cigarette smoking after dinner with walking."

B. "You're happier because walking is good exercise."

C. "It's good that you've stopped smoking after dinner because smoking can cause cancer."

D. "Find someone to walk with you because it will be more fun that way."

12. Robin: "I'm having a hard time quitting smoking because the only way I can relax is to smoke a cigarette."

The response that best communicates acceptance and understanding of Robin's situation is:

A. "Smoking in order to relax is a bad habit."

B. "You don't understand what relaxation is."

C. "Don't let yourself smoke when you're upset."

D. "It's tough for you to give up smoking because you feel you need to smoke in order to relax."

13. Michael: "I feel great about myself because I didn't smoke a single cigarette when we were playing golf today."

The response that best communicates acceptance and understanding of Michael's situation is:

A. "You should have had the sense to quit long ago."

B. "The main reason you have been smoking is because your friends smoke."

C. "You're pleased because you were able to avoid smoking while playing golf."

D. "I hope you never smoke again because it is so bad for your health."

14. Mary: "I'm pleasantly surprised that I was able to go a party and not smoke a single cigarette."

The response that best communicates acceptance and understanding of Mary's situation is:

A. "You're pleased that you were able to avoid smoking at a party."

B. "You're happy because you finally gave up your bad habit."

C. "You used to smoke at parties because of the social pressure you felt."

D. "Keep it up and don't ever smoke at a party again."

15. Jim: "I'm angry because the people in my car pool smoke even though I've asked them not to."

The response that best communicates acceptance and understanding of Jim's situation is:

A. "The people that you ride with must be very inconsiderate."

B. "You're upset because the people in your car pool continue to smoke even though you asked them not to."

C. "Ask them again not to smoke."

D. "You probably didn't ask them in the right way."

SCORING KEY

RESPONDING TO OTHERS ABOUT SMOKING

Item	Answer	Item	Answer
1	C	9	C
2	B	10	B
3	D	11	A
4	A	12	D
5	D	13	C
6	B	14	A
7	A	15	B
8	D		

INCORRECT ANSWER CHOICE ANALYSES

The incorrect answer choices for each item are listed below using the following method of annotation:

Directing - a response that tells or suggests to the message sender what to do

Warning - a response that warns the message sender what might happen

Criticizing/Disagreeing - a response that criticizes or disagrees with the message sender

Diagnosing - a response that suggests an explanation for the message sender's statement

	Directing	Warning	Criticizing/ Disagreeing	Diagnosing
1	A		B	D
2	C	D	A	
3	B	C	A	
4	C		D	B
5	A		C	B
6		D	A, C	
7	B	C	D	
8	B	C	A	
9	B	A	D	
10	A, C			D
11	D	C		B
12	C		A, B	
13		D	A	B
14	D		B	C
15	C		D	A

PEOPLE PROFILES

TYPE OF MEASURE: Affective

OUTCOME ASSESSED: Perceived Consequences of Smoking

TARGET POPULATION: Adults or Adolescents

GENERAL DESCRIPTION:

This measure uses a semantic differential technique in which individuals are asked to describe smokers and nonsmokers, using a series of bipolar adjectives. These adjectives relate to the characteristics of health, aesthetic appeal, athletic ability, and social acceptability.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 296-298.

PEOPLE PROFILES

What are your impressions of Smokers and Nonsmokers? Please respond to the two questions below by placing checks in the appropriate places on each scale. The closer a check is to one end of the scale, the more the word or phrase at that end of the scale reflects your impressions.

For example, if you were asked to describe babies, you might respond as follows:

HOW WOULD YOU DESCRIBE BABIES?

Little ____ : __✓__ : ____ : ____ : ____ **Big**
Old ____ : ____ : ____ : ____ : __✓__ **Young**
Fat ____ : ____ : __✓__ : ____ : ____ **Thin**

SECTION I

HOW WOULD YOU DESCRIBE SMOKERS?

Attractive ____ : ____ : ____ : ____ : ____ Unattractive
Physically Fit ____ : ____ : ____ : ____ : ____ Physically Unfit
Unappealing ____ : ____ : ____ : ____ : ____ Appealing
Healthy ____ : ____ : ____ : ____ : ____ Unhealthy
Not athletic ____ : ____ : ____ : ____ : ____ Athletic
Unpopular ____ : ____ : ____ : ____ : ____ Popular
Often Sick ____ : ____ : ____ : ____ : ____ Often Well
Well Liked ____ : ____ : ____ : ____ : ____ Not Well Liked

SECTION II

HOW WOULD YOU DESCRIBE NONSMOKERS?

Attractive ____ : ____ : ____ : ____ : ____ Unattractive
Physically Fit ____ : ____ : ____ : ____ : ____ Physically Unfit
Unappealing ____ : ____ : ____ : ____ : ____ Appealing
Healthy ____ : ____ : ____ : ____ : ____ Unhealthy
Not athletic ____ : ____ : ____ : ____ : ____ Athletic
Unpopular ____ : ____ : ____ : ____ : ____ Popular
Often Sick ____ : ____ : ____ : ____ : ____ Often Well
Well Liked ____ : ____ : ____ : ____ : ____ Not Well Liked

INSTRUCTIONS FOR SCORING

PEOPLE PROFILES

Point values are assigned to responses according to the following scoring key.

SCORING KEY

HOW WOULD YOU DESCRIBE SMOKERS?

1.	Attractive	1	2	3	4	5	Unattractive
2.	Physically Fit	1	2	3	4	5	Physically Unfit
3.	Unappealing	5	4	3	2	1	Appealing
4.	Healthy	1	2	3	4	5	Unhealthy
5.	Not athletic	5	4	3	2	1	Athletic
6.	Unpopular	5	4	3	2	1	Popular
7.	Often Sick	5	4	3	2	1	Often Well
8.	Well Liked	1	2	3	4	5	Not Well Liked

HOW WOULD YOU DESCRIBE NONSMOKERS?

9.	Attractive	5	4	3	2	1	Unattractive
10.	Physically Fit	5	4	3	2	1	Physically Unfit
11.	Unappealing	1	2	3	4	5	Appealing
12.	Healthy	5	4	3	2	1	Unhealthy
13.	Not athletic	1	2	3	4	5	Athletic
14.	Unpopular	1	2	3	4	5	Popular
15.	Often Sick	1	2	3	4	5	Often Well
16.	Well Liked	5	4	3	2	1	Not Well Liked

This inventory can be scored by adding the point value of every response and dividing this sum by the number of responses. The maximum score attainable of 5 points indicates a strong belief that nonsmokers are healthier, more aesthetically appealing, better able to perform athletically, and more socially accepted than individuals who smoke.

INSTRUCTIONS FOR SCORING (cont.)

PEOPLE PROFILES

In addition to an overall score for this outcome, responses can be considered separately, as follows:

Health

Smoker: Items 4, 7
Nonsmoker: Items 12, 15

Aesthetic Appeal

Smoker: Items 1, 3
Nonsmoker: Items 9, 11

Athletic Performance

Smoker: Items 2, 5
Nonsmoker: Items 10, 13

Social acceptability

Smoker: Items 6, 8
Nonsmoker: Items 14, 16

THINK ABOUT PEOPLE

TYPE OF MEASURE: Affective

OUTCOME ASSESSED: Perceived Consequences of Smoking

TARGET POPULATION: Elementary school children

GENERAL DESCRIPTION:

This measure is designed to assess children's beliefs about the effects of smoking. Children are presented with one-sentence descriptions of individuals. Each individual is described according to his or her general state of health, aesthetic appeal, athletic performance, or social acceptability. Children are asked to indicate whether they think the person being described smokes or not.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 299-301.

THINK ABOUT PEOPLE

The questions below ask about different people you don't know. Circle the word that shows what you think about a person.

YES = The person probably smokes
MAYBE = Not sure if the person smokes
NO = The person probably does not smoke

YES MAYBE NO 1. Gregg has many friends. Do you think he smokes?

YES MAYBE NO 2. Everybody says Alicia is pretty. Do you think she smokes?

YES MAYBE NO 3. Cheryl almost never looks good. Do you think she smokes?

YES MAYBE NO 4. Dwayne feels sick a lot. Do you think he smokes?

YES MAYBE NO 5. Raymond is a very good runner. Do you think he smokes?

YES MAYBE NO 6. Many boys like Denise. Do you think she smokes?

YES MAYBE NO 7. Linda is not healthy. Do you think she smokes?

YES MAYBE NO 8. Girls don't like Kevin. Do you think he smokes?

Think About People
Page 2

YES MAYBE NO 9. Keith usually feels healthy. Do you think he smokes?

YES MAYBE NO 10. Lilly is not very good at sports. Do you think she smokes?

YES MAYBE NO 11. Tony has a hard time when he runs. Do you think he smokes?

YES MAYBE NO 12. Lisa has not been sick all year. Do you think she smokes?

YES MAYBE NO 13. The other kids do not like Valerie. Do you think she smokes?

YES MAYBE NO 14. Vickie is good at sports. Do you think she smokes?

YES MAYBE NO 15. Jimmy is the best-looking boy in the class. Do you think he smokes?

YES MAYBE NO 16. Michael does not look as good as the other kids. Do you think he smokes?

INSTRUCTIONS FOR SCORING
THINK ABOUT PEOPLE

Point values are assigned to responses according to the following scoring key.

SCORING KEY

	YES	MAYBE	NO
1.	0	1	2
2.	0	1	2
3.	2	1	0
4.	2	1	0
5.	0	1	2
6.	0	1	2
7.	2	1	0
8.	2	1	0
9.	0	1	2
10.	2	1	0
11.	2	1	0
12.	0	1	2
13.	2	1	0
14.	0	1	2
15.	0	1	2
16.	2	1	0

This inventory can be scored by adding the point value of every response and dividing this sum by the number of responses. The maximum score attainable of 2 points indicates a strong perception of the negative effects of smoking on health, aesthetic appeal, social acceptability, and athletic ability.

In addition to an overall score for this outcome, response can be considered separately as follows:

Health

Males: Items 4, 9
Females: Items 7, 12

Aesthetic Appeal

Males: Items 15, 16
Females: Items 2, 3

Athletic Performance

Males: Items 5, 11
Females: Items 10, 14

Social Acceptability

Males: Items 1, 8
Females: Items 6, 13

REFRAINING FROM SMOKING

TYPE OF MEASURE: Affective

OUTCOME ASSESSED: Perceived Ability to Refrain from Smoking

TARGET POPULATION: Adults or Adolescents (current or former smokers)

GENERAL DESCRIPTION:

This measure is designed to assess individuals' perceived self-efficacy in being able to resist urges to smoke. Individuals are presented with a series of items describing situations in which people often experience an urge to smoke and asked to indicate if they can refrain from smoking in each situation. If individuals indicate that they can refrain, then they are asked to estimate, on a 10 to 100 numerical scale, how confident they are of their ability to refrain from smoking in that situation.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 302-304.

REFRAINING FROM SMOKING

This survey describes various times when people often feel an urge to smoke. Read each statement. Circle YES or NO to show if you could refrain or keep from smoking at that time. If you circle YES, then use the Confidence Scale to show how certain you are of your answer.

The following examples show how the Confidence Scale is used.

Physical Strength Examples	**CAN YOU DO THIS?**	**IF YES, HOW CERTAIN ARE YOU?**
You can lift a 50 pound weight.	**[✓ YES]/NO**	70
You can lift a 200 pound weight.	**YES/[✓ NO]**	____

Confidence Scale

10	20	30	40	50	60	70	80	90	100
Very Uncertain				Somewhat Certain					Very Certain

		CAN YOU REFRAIN FROM SMOKING?	IF YES, HOW CERTAIN ARE YOU?
1.	You have just finished an enjoyable meal.	YES/NO	_____
2.	You are drinking coffee or tea.	YES/NO	_____
3.	You have been watching television for quite a while.	YES/NO	_____
4.	You are visiting friends, some of whom are smoking.	YES/NO	_____
5.	You have just completed a difficult task, one that has taken you quite a while to finish.	YES/NO	_____
6.	You are having a hard time breathing because the air is polluted.	YES/NO	_____

		CAN YOU REFRAIN FROM SMOKING?	IF YES, HOW CERTAIN ARE YOU?
7.	You are feeling particularly tense and anxious.	YES/NO	_____
8.	You are reading something interesting.	YES/NO	_____
9.	You are talking on the telephone.	YES/NO	_____
10.	You are leaving a movie.	YES/NO	_____
11.	You have just had a big argument with a friend and you are very upset.	YES/NO	_____
12.	You are relaxing after a busy day.	YES/NO	_____
13.	You haven't had a cigarette in a while and someone offers you one.	YES/NO	_____
14.	You are waiting for a very important phone call that is ten to fifteen minutes late.	YES/NO	_____
15.	You are home alone and you start to get bored.	YES/NO	_____
16.	You are at a party and someone offers you a cigarette.	YES/NO	_____
17.	You are at a sporting event such as a ball game.	YES/NO	_____
18.	You are feeling as if you really need to smoke.	YES/NO	_____
19.	You are taking a work break.	YES/NO	_____
20.	You are with a friend who urges you to smoke.	YES/NO	_____

INSTRUCTIONS FOR SCORING

REFRAINING FROM SMOKING

This inventory can be scored in several ways, two of which are described below. The first procedure relies on the YES/NO responses only, providing an easily obtained gross index of perceived ability to refrain from smoking. The second procedure combines the YES/NO responses and the confidence ratings in a single score, providing an index that reflects perceived ability to refrain from smoking across a variety of settings, coupled with the level of confidence manifested in that ability.

ANALYSIS OF YES/NO RESPONSES ONLY

Count the number of YES responses, disregarding the confidence ratings. The maximum score attainable of 20 YES responses represents a strong perceived ability to refrain from smoking in a wide variety of settings.

ANALYSIS COMBINING YES/NO RESPONSES AND CONFIDENCE RATINGS

Total all of the confidence ratings made in conjunction with a "YES" response and divide this sum by 20 (the total number of items in the inventory.) Confidence ratings made in conjunction with a "NO" response should be omitted from the analysis. The maximum score attainable of 100 represents a strong perceived ability to refrain from smoking across a wide variety of settings, along with a high level of confidence in that ability. It should be noted that this scoring procedure assumes a confidence rating of zero for those items to which respondents indicated "NO," meaning that they do not think they are able to refrain from smoking in the situation described.

SMOKING SURVEY

TYPE OF MEASURE: Affective

OUTCOME ASSESSED: Intention to Refrain from Smoking

TARGET POPULATION: Adults or Adolescents

GENERAL DESCRIPTION:

This measure is designed to assess the extent to which individuals intend to refrain from smoking. Individuals are asked whether they intend to refrain from smoking for the next 12 months. If individuals indicate that they intend to refrain from smoking for the next 12 months, then they are asked to estimate, on a 10 to 100 numerical scale, the strength of their intention.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 305-306.

SMOKING SURVEY

This survey asks about your intention to refrain from smoking.

Please answer Question 1. If your answer to Question 1 is "YES," please answer Question 2.

1. Do you intend to refrain from smoking for the next 12 months? (Circle One)

YES NO

2. If yes, how strong is your intention to refrain from smoking? (Circle One)

10	20	30	40	50	60	70	80	90	100
Very Weak									Very Strong

INSTRUCTIONS FOR SCORING
SMOKING SURVEY

Point values are assigned to Question 1 as follows:

YES = 1
NO = 0

For Question 2, the point value is the numerical value circled.

Because Questions 1 and 2 call for different types of responses, those responses should not be combined when aggregating the data for a group of respondents.

ABOUT SMOKING

TYPE OF MEASURE: Affective

OUTCOME ASSESSED: Intention to Refrain from Smoking

TARGET POPULATION: Elementary school children

GENERAL DESCRIPTION:

This measure is designed to assess the extent to which children intend to refrain from smoking. Children are asked whether they intend to smoke any cigarettes during the next 12 months. They are to select the response that best describes their future behavior.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 307-308.

ABOUT SMOKING

Please circle your answer to the following question about smoking.

1. Will you smoke any cigarettes during the next 12 months?

CERTAINLY YES	PROBABLY YES	MAYBE	PROBABLY NOT	CERTAINLY NOT

INSTRUCTIONS FOR SCORING
ABOUT SMOKING

Point values are assigned to responses as follows:

CERTAINLY YES = 1
PROBABLY YES = 2
MAYBE = 3
PROBABLY NOT = 4
CERTAINLY NOT = 5

The maximum score attainable of 5 points indicates a strong intention to refrain from smoking.

IDEAS ABOUT SYSTEMATIC DECISION-MAKING

TYPE OF MEASURE:	Affective
OUTCOME ASSESSED:	Belief in the Utility of Systematic Decision-Making
TARGET POPULATION:	Adults or Adolescents

GENERAL DESCRIPTION:

This inventory is a Likert scale in which respondents are asked to register their degree of agreement with a series of statements about making decisions systematically.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 309-311.

IDEAS ABOUT SYSTEMATIC DECISION-MAKING

This survey is about making decisions systematically. Please respond to all the statements in the survey.

Read each statement. Decide the extent to which you agree with it. Circle the appropriate letter to the left of the statement. Use the following scale:

SA = Strongly Agree
A = Agree
U = Uncertain
D = Disagree
SD = Strongly Disagree

SA A U D SD 1. People who make decisions systematically reach better decisions than people who don't.

SA A U D SD 2. Systematic decision-making takes too much time.

SA A U D SD 3. People who use systematic decision-making have greater control over the events in their lives.

SA A U D SD 4. People makes equally good decisions no matter how they arrive at them.

SA A U D SD 5. Systematic decision-making is too complicated.

SA A U D SD 6. It is worth the time to make decisions systematically.

SA A U D SD 7. A systematic decision-making process doesn't consider how people feel.

SA A U D SD 8. People who use systematic decision-making won't make hasty decisions that they will regret later.

SA A U D SD 9. Systematic decision-making is too intellectual.

SA A U D SD 10. Systematic decision-making helps people make the best choice when deciding about important things in their lives.

SA A U D SD 11. Systematic decision-making only works when making decisions with a group of people.

SA A U D SD 12. Systematic decision-making is the best way to make decisions.

SA A U D SD 13. Systematic decision-making is easy when people learn how to use it.

SA A U D SD 14. Only logical people have the skills needed for systematic decision-making.

SA A U D SD 15. Systematic decision-making is not flexible enough.

SA A U D SD 16. The effort involved in making decisions systematically is well worth it.

SA A U D SD 17. It is too hard to get the information needed to make decisions systematically.

SA A U D SD 18. Systematic decision-making helps people think about their values when they make decisions.

SA A U D SD 19. People follow through with decisions they have made systematically.

SA A U D SD 20. People make their best decisions when they follow their first impulses.

INSTRUCTIONS FOR SCORING
IDEAS ABOUT SYSTEMATIC DECISION-MAKING

Point values are assigned to responses according to the following scoring key.

SCORING KEY

	SA	A	U	D	SD
1.	5	4	3	2	1
2.	1	2	3	4	5
3.	5	4	3	2	1
4.	1	2	3	4	5
5.	1	2	3	4	5
6.	5	4	3	2	1
7.	1	2	3	4	5
8.	5	4	3	2	1
9.	1	2	3	4	5
10.	5	4	3	2	1
11.	1	2	3	4	5
12.	5	4	3	2	1
13.	5	4	3	2	1
14.	1	2	3	4	5
15.	1	2	3	4	5
16.	5	4	3	2	1
17.	1	2	3	4	5
18.	5	4	3	2	1
19.	5	4	3	2	1
20.	1	2	3	4	5

This inventory can be scored by adding the point value of every response and dividing this sum by the number of responses. The maximum score attainable of 5 points indicates a strong belief in the utility of making decisions systematically.

IDEAS ABOUT DECISIONS

TYPE OF MEASURE: Affective

OUTCOME ASSESSED: Belief in the Utility of Systematic Decision-Making

TARGET POPULATION: Elementary school children

GENERAL DESCRIPTION:

This inventory is a Likert scale in which children are asked to register their degree of agreement with a series of statements about systematic decision-making.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 312-313.

IDEAS ABOUT DECISIONS

The statements below are about making decisions. Circle the word that shows how much you agree with each statement.

YES = I agree
MAYBE = I am not sure if I agree
NO = I do not agree

YES MAYBE NO 1. It is worth the time it takes to make decisions carefully.

YES MAYBE NO 2. People should go with their first ideas when making decisions.

YES MAYBE NO 3. People are happier with their decisions when they take the time to make them carefully.

YES MAYBE NO 4. Making careful decisions is too difficult.

YES MAYBE NO 5. Making careful decisions takes too much time.

YES MAYBE NO 6. When making decisions people should do what they feel, not what they think.

YES MAYBE NO 7. It is easy to make decisions carefully.

YES MAYBE NO 8. People make equally good decisions no matter how they arrive at them.

YES MAYBE NO 9. People who make quick decisions are usually disappointed with them later.

YES MAYBE NO 10. Smart people take time to make decisions carefully.

INSTRUCTIONS FOR SCORING
IDEAS ABOUT DECISIONS

Point values are assigned to responses according to the following scoring key.

SCORING KEY

	YES	MAYBE	NO
1.	2	1	0
2.	0	1	2
3.	2	1	0
4.	0	1	2
5.	0	1	2
6.	0	1	2
7.	2	1	0
8.	0	1	2
9.	2	1	0
10.	2	1	0

This inventory can be scored by adding the point value of every response and dividing this sum by the number of responses. The maximum score attainable of 2 points indicates a strong belief in the utility of making decisions systematically.

WOULD YOU USE SYSTEMATIC DECISION-MAKING?

TYPE OF MEASURE: Affective

OUTCOME ASSESSED: Intention to Use Systematic Decision-Making

TARGET POPULATION: Adults or Adolescents

GENERAL DESCRIPTION:

This measure is designed to assess the extent to which individuals intend to use systematic decision-making. Individuals are asked whether they would use systematic decision-making in a variety of situations. If individuals indicate that they would use systematic decision-making, they are asked to estimate, on a 10 to 100 numerical scale, how confident they are of their intention.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 314-316.

WOULD YOU USE SYSTEMATIC DECISION-MAKING?

This survey describes situations in which people might use systematic decision-making. Read each statement. Circle Yes or No to indicate whether you would use systematic decision-making in the situation described in the item.

If you circle Yes, then use the Confidence Scale to show how certain you are that you would use systematic decision-making in that situation.

The following examples show how the Confidence Scale is used.

	WOULD YOU USE SYSTEMATIC DECISION-MAKING?	IF YES, HOW CERTAIN ARE YOU?
1. You are deciding on a career.	[✓ YES]/NO	90
2. You are choosing where to eat lunch.	[✓ YES]/NO	70
3. You are swerving to avoid a car accident.	YES/[✓ NO]	

Confidence Scale

10	20	30	40	50	60	70	80	90	100
Very Uncertain				Somewhat Certain					Very Certain

SITUATION	WOULD YOU USE SYSTEMATIC DECISION-MAKING?	IF YES, HOW CERTAIN ARE YOU?
1. You are deciding whether to start an exercise program.	YES/NO	
2. You are choosing a diet.	YES/NO	
3. You are being rushed by others to make a quick decision.	YES/NO	
4. You are choosing an exercise program.	YES/NO	

	SITUATION	WOULD YOU USE SYSTEMATIC DECISION-MAKING?	IF YES, HOW CERTAIN ARE YOU?
5.	You are being urged by others to make a decision in their favor.	YES/NO	______
6.	You are selecting a way to reduce your stress.	YES/NO	______
7.	You are deciding whether to see a doctor.	YES/NO	______
8.	You are making a decision and have many other things to do.	YES/NO	______
9.	You are deciding whether to take vitamins.	YES/NO	______
10.	You are deciding what to eat for dinner.	YES/NO	______
11.	You are deciding whether to use a non-prescription drug.	YES/NO	______
12.	You are deciding whether to start a diet.	YES/NO	______
13.	You are deciding what to do for a cold.	YES/NO	______
14.	You are making a decision while you have many things on your mind.	YES/NO	______
15.	You are deciding what to do to relax.	YES/NO	______

INSTRUCTIONS FOR SCORING
WOULD YOU USE SYSTEMATIC DECISION-MAKING?

This inventory can be scored in several ways, two of which are described below. The first procedure relies on the YES/NO responses only, providing an easily obtained gross index of intention to use systematic decision-making. The second procedure combines the YES/NO responses and the confidence ratings in a single score, providing an index that reflects intention to use systematic decision-making in a variety of situations, coupled with the level of confidence manifested in that intention.

ANALYSIS OF YES/NO RESPONSES ONLY

Count the number of YES responses, disregarding the confidence ratings. The maximum score attainable of 15 YES responses represents a strong intention to use systematic decision-making in a variety of situations.

ANALYSIS COMBINING YES/NO RESPONSES AND CONFIDENCE RATINGS

Total all of the confidence ratings made in conjunction with a "YES" response and divide this sum by 15 (the total number of items in the inventory). Confidence ratings made in conjunction with a "NO" response should be omitted from the analysis. The maximum score attainable of 100 represents a strong intention to use systematic decision-making in a variety of situations, along with a high level of confidence in that ability. It should be noted that this scoring procedure assumes a confidence rating of zero for those items to which respondents indicated "NO," meaning that they do not intend to use systematic decision-making in the specified situation.

WOULD YOU MAKE CAREFUL DECISIONS?

TYPE OF MEASURE: Affective

OUTCOME ASSESSED: Intention to Use Systematic Decision-Making

TARGET POPULATION: Elementary school children

GENERAL DESCRIPTION:

Children are asked whether they would make a careful decision in a variety of situations. They are then asked to select the response that best describes their intentions.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 317-318.

WOULD YOU MAKE CAREFUL DECISIONS?

Read each question. Then put a check (✓) under the answer that best tells if you would make a careful decision.

Would you make a careful decision when...	CERTAINLY YES	PROBABLY YES	MAYBE	PROBABLY NOT	CERTAINLY NOT
1. ... you are deciding whether to stay up late at night?	___	___	___	___	___
2. ... you are choosing a way to lose weight?	___	___	___	___	___
3. ... you are deciding whether you want to try any drugs?	___	___	___	___	___
4. ... you are deciding whether to do what your friends want you to do?	___	___	___	___	___
5. ... you are being rushed to decide quickly?	___	___	___	___	___
6. ... you are deciding whether or not to drink alcohol?	___	___	___	___	___
7. ... you are choosing what to eat for lunch?	___	___	___	___	___
8. ... you are deciding whether to smoke cigarettes?	___	___	___	___	___
9. ... you are deciding how to relax?	___	___	___	___	___
10. ... you are choosing a way to exercise?	___	___	___	___	___

INSTRUCTIONS FOR SCORING
WOULD YOU MAKE CAREFUL DECISIONS?

Point values are assigned to responses as follows:

CERTAINLY YES = 5

PROBABLY YES = 4

MAYBE = 3

PROBABLY NOT = 2

CERTAINLY NOT = 1

This inventory can be scored by adding the point value of every response and dividing this sum by the number of responses. The maximum score attainable of 5 points indicates a strong intention to use systematic decision-making in a variety of situations.

MY BODY

TYPE OF MEASURE: Affective

OUTCOME ASSESSED: Respect for One's Body

TARGET POPULATION: Elementary school children

GENERAL DESCRIPTION:

This measure is designed to assess children's respect for their bodies. Children are asked to indicate whether they would engage in activities that are healthful and avoid activities that are harmful to the body.

ADDITIONAL INFORMATION:

Test specifications for this measure can be found on pages 319-320.

MY BODY

Read each question. Then put a check (√) under the answer that best tells what you are willing to do to take care of your body.

In order to take care of your body, are you willing to ...	CERTAINLY YES	PROBABLY YES	MAYBE	PROBABLY NOT	CERTAINLY NOT
1. ... exercise several times each week?	___	___	___	___	___
2. ... never drink large amounts of alcohol?	___	___	___	___	___
3. ... do what your doctor tells you to do?	___	___	___	___	___
4. ... never smoke any cigarettes?	___	___	___	___	___
5. ... get immunizations against diseases?	___	___	___	___	___
6. ... get at least 8 hours of sleep every night?	___	___	___	___	___
7. ... see your doctor regularly?	___	___	___	___	___
8. ... keep yourself from getting too anxious?	___	___	___	___	___
9. ... be careful about what you eat?	___	___	___	___	___
10. ... never take unnecessary drugs?	___	___	___	___	___

INSTRUCTIONS FOR SCORING

MY BODY

Point values are assigned to responses according to the following scoring key:

SCORING KEY

CERTAINLY YES = 5
PROBABLY YES = 4
MAYBE = 3
PROBABLY NOT = 2
CERTAINLY NOT = 1

This inventory can be scored by adding the point value of every response and dividing this sum by the number of responses. The maximum score attainable of 5 points indicates a strong respect for one's body, as evidenced by a willingness to engage in activities that are good for it and to avoid those that are not.

CHAPTER SIX

EXISTING MEASURES

This chapter contains the existing measures that were located as a result of a comprehensive literature search, then identified as corresponding to the outcome statements listed in Chapter Four. The process by which existing measures were screened and selected is explained more completely in Chapter Two.

MEASURE TITLE PAGE

A title page precedes each measure. This page indicates the _type of measure_ (behavioral, knowledge, skill, or affective), the title of the _outcome assessed_, and the _target population_ for the instrument. A _general description_ is presented, providing an overview of the assessment strategy employed in the measure. The general description also provides information about the manner in which the instrument has previously been used. A _technical information_ section summarizes any psychometric information that has been collected for the instrument. _Authorship_ information for each measure is also supplied. If there is any _additional information_ available for a measure, reference citations are also given.

USING THE MEASURES

All of the measures in this chapter have been readied for photocopying. Directions to respondents and scoring instructions have been provided whenever they were available. The scoring instructions have been placed on separate pages to facilitate reproduction of the measures for administration. Handbook users have permission to use all of the measures in this chapter without seeking further permission from the measures' authors.

SMOKING HABITS QUESTIONNAIRE

TYPE OF MEASURE: Behavioral

OUTCOME ASSESSED: Refraining from Smoking

TARGET POPULATION: Adults or adolescents

GENERAL DESCRIPTION:

The Smoking Habits Questionnaire surveys smoking-related behavior. Respondents are asked to indicate if they have ever used, and if they currently use, tobacco products or marijuana. The measure elicits the specific characteristics of any smoking behavior, such as substance, frequency, and topography. In addition, the measure elicits information about attempts to stop smoking and the general health status of the respondent.

TECHNICAL INFORMATION:

The authors report a study in which the measure was administered to 267 individuals, 181 of whom reported no use of tobacco. Responses for selected questions dealing with frequency of smoking were compared to results of blood tests administered subsequent to respondents' completion of the questionnaire. The respondents had not been informed when they completed the questionnaire that blood tests were to be given.

The degree of agreement between questionnaire responses and two physiologic measures (serum thiocyanate and expired carbon monoxide) was substantial, ranging from 64 percent for smokers (based on questionnaire responses) to 100 percent for non-smokers (based on questionnaire responses). The authors report that responses to the questionnaire items were internally consistent.

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Gary D. Friedman, M.D. and William Kahn

ADDITIONAL INFORMATION:

Petitti, D.B., Friedman, G.D., & Kahn, W. Accuracy of information on smoking habits provided on self-administered research questionnaires. American Journal of Public Health, 1981, 71, 308-311.

SMOKING HABITS QUESTIONNAIRE

PLEASE READ THIS FIRST

Today you will be asked to answer more than one set of questions about smoking. This questionnaire is an in-depth survey of smoking habits for a special study of smoking and health. Your answers will be kept confidential. In reports of the study, no individual will be identified. The questionnaire will not be put in your medical record nor sent to your doctor. You need not answer any questions to which you object; refusal to answer will not prejudice your future medical care. If you want more information about the study, ask the person who collects the questionnaire.

IMPRINT AREA

If you have never used any tobacco product (cigarettes, cigars, tobacco pipe, chewing tobacco, snuff), check box below and then skip to questions 41-52.

1 ☐ Never used any tobacco product

If you have ever used any tobacco product (cigarettes, cigars, tobacco pipe, chewing tobacco, snuff), answer questions below, then answer questions 41-52.

1. Have you ever smoked cigarettes regularly for at least one year? (Here "regularly" means at least 5 cigarettes per week, almost every week)

   1 ☐ Yes — If Yes, answer questions 2-19 below.
   2 ☐ No — If No, skip to question 20.

2. How old were you when you started smoking cigarettes regularly? ___ ___ years old

3. Do you still smoke cigarettes regularly?

   1 ☐ Yes
   2 ☐ No, but I still smoke cigarettes occasionally
   3 ☐ No, not at all

4. If you have stopped smoking cigarettes regularly, how many years ago did you stop? (If you stopped in the past year, write in 00) ___ ___ years ago

5. If you have stopped smoking cigarettes regularly, what was the main reason that you stopped?

   Check only one

   1 ☐ Didn't like it or need it any more
   2 ☐ Expense
   3 ☐ I had symptoms or illness
   (Specify)________________
   4 ☐ Illness or death of a friend or family member
   5 ☐ [illegible] would cause illness
   6 ☐ Other
   (Specify)________________

6. Altogether, how many years have you smoked cigarettes regularly? ___ ___ years

7. How many cigarettes do you smoke per day, on the average? Or, if you have stopped smoking regularly, how many did you smoke, on the average, before you stopped? (1 pack = 20 cigarettes) ___ ___ cigarettes per day

8. What brand of cigarette do you usually smoke? Or, if you have stopped smoking, what brand did you smoke most recently?________________

   Are (were) these:
   1 ☐ filtered
   2 ☐ unfiltered

   ➡ Are (were) these:
   1 ☐ regular length (85mm)
   2 ☐ king-size (100 mm)
   3 ☐ long

   ➡ Are (were) these:
   1 ☐ mentholated
   2 ☐ plain

   How many years did you smoke this particular brand, size and type of cigarette? (If less than 6 months, write in 00) ___ ___ years

9. What brand of cigarette did you smoke for the longest time? ________________

   How many years did you smoke this brand? ___ ___ years

10. Altogether, how many years have you smoked filter cigarettes? (If never or less than 6 months, write in 00) ___ ___ years

11. Altogether, how many years have you smoked unfiltered cigarettes? (If never or less than 6 months, write in 00) ___ ___ years

12. Altogether, how many years have you smoked mentholated cigarettes? (If never or less than 6 months, write in 00) ___ ___ years

13. Altogether, how many years have you smoked low tar cigarettes? (If never or less than 6 months, write in 00) ___ ___ years

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29. How often do you inhale the cigar smoke? Or, if you have stopped, how often did you inhale it before you stopped?

Check only one
1 ☐ All of the time, each puff
2 ☐ Most of the time
3 ☐ Part of the time
4 ☐ Rarely, once in a while
5 ☐ Never inhale

30. Do (did) you inhale the smoke slightly, moderately or deeply?

Check only one
1 ☐ Do (did) not inhale
2 ☐ Slightly (back to throat)
3 ☐ Moderately (partly into chest)
4 ☐ Deeply (deeply into chest)

31. Have you ever smoked a tobacco pipe regularly for at least one year? (Here "regularly" means at least two pipefuls of tobacco a week, almost every week)

1 ☐ Yes If Yes, answer questions 32-39 below.
2 ☐ No If No, skip to question 40.

32. How old were you when you started smoking a pipe regularly? ___ ___ years old

33. Do you still smoke a pipe regularly?

1 ☐ Yes
2 ☐ No

34. If you have stopped smoking a pipe regularly, how many years ago did you stop? ___ ___ years ago

35. Altogether, how many years have you smoked a pipe regularly? ___ ___ years

36. How many pipefuls of tobacco do you regularly smoke per day, on the average? Or, if you have stopped smoking a pipe, how many did you usually smoke before you stopped? (If less than 1 per day, write in 00) ___ ___ pipes

37. What brand of pipe tobacco do you currently smoke? Or, if you have stopped smoking a pipe, what brand did you smoke most recently? ______________________________

38. How often do you inhale the smoke? Or, if you have stopped, how often did you inhale it before you stopped?

Check only one
1 ☐ All of the time, each puff
2 ☐ Most of the time
3 ☐ Part of the time
4 ☐ Rarely, once in a while
5 ☐ Never inhale

39. Do (did) you inhale the smoke slightly, moderately or deeply?

Check only one
1 ☐ Do (did) not inhale
2 ☐ Slightly (back to throat)
3 ☐ Moderately (partly into chest)
4 ☐ Deeply (deeply into chest)

40. Have you ever regularly used either snuff or chewing tobacco for at least one year? (Here "regularly" means at least once a week, almost every week)

(You may check more than one)
00 ☐ No, never regularly used snuff or chewing tobacco
1X ☐ Yes, have used snuff and still use it
2X ☐ Yes, have used snuff, but I no longer use it
X1 ☐ Yes, have used chewing tobacco and I still use it
X2 ☐ Yes, have used chewing tobacco, but I no longer use it

▶ 41. On the average, how many hours per week are you exposed to cigarette, cigar or pipe smoke in your home because of smoking by others? (Write in 000 if less than 1 hour per week) ___ ___ ___ hours

42. On the average, how many hours per week are you exposed to cigarette, cigar or pipe smoke in a small space other than your home (such as airplane, office, car, etc.) because of smoking by others? (Write in 000 if less than 1 hour per week) ___ ___ ___ hours

43. On the average, how many hours per week are you exposed to cigarette, cigar or pipe smoke in a large indoor area (such as restaurant, hotel lobby, lecture hall, etc.) because of smoking by others? (Write in 000 if less than 1 hour per week) ___ ___ ___ hours

14. When your smoke, how often do you inhale the smoke? Or, if you have stopped smoking, how often did you inhale the smoke before you stopped?

Check only one
1 ☐ All the time, each puff
2 ☐ Most of the time
3 ☐ Part of the time
4 ☐ Rarely
5 ☐ Never inhale

15. Do (did) you inhale the smoke slightly, moderately or deeply?

Check only one
1 ☐ Do (did) not inhale
2 ☐ Slightly (back to throat)
3 ☐ Moderately (partly into chest)
4 ☐ Deeply (deeply into chest)

16. How much of the cigarette do you usually smoke? Or, if you have stopped smoking, how much did you usually smoke before you stopped?

Check only one
1 ☐ More than ¾
2 ☐ ½ to ¾
3 ☐ Less than ½

17. How long after awakening do you usually have your first cigarette? Or, if you have stopped smoking, how long after awakening did you usually have your first cigarette before you stopped?

Check only one
1 ☐ Immediately, within minutes
2 ☐ Not immediately, but within one hour
3 ☐ More than one hour, but before lunch
4 ☐ Lunch or later, but before dinner
5 ☐ Dinnertime or later

18. How many times have you made a serious attempt to stop smoking cigarettes? ___ ___ times

19. When you last made a serious attempt to stop, how would you describe your experience in the first two days after your last cigarette?

Check only one
1 ☐ Never tried seriously to quit
2 ☐ Great difficulty
3 ☐ Moderate difficulty
4 ☐ No real difficulty

20. Have you ever smoked cigars regularly for at least one year? (Here "regularly" means at least two cigars per week, almost every week)

1 ☐ Yes If Yes, answer questions 21-30 below.
2 ☐ No If No, skip to question 31.

21. How old were you when you started smoking cigars regularly? ___ ___ years old

22. Do you still smoke cigars regularly?

1 ☐ Yes
2 ☐ No, but I still smoke cigars occasionally
3 ☐ No, not at all

23. If you have stopped smoking cigars regularly, how many years ago did you stop? ___ ___ years ago

24. Altogether, how many years have you smoked cigars regularly? ___ ___ years

25. How many cigars do you smoke per day, on the average? Or, if you have stopped smoking cigars, how many did you usually smoke before you stopped? (If less than 1 per day, write in 00) ___ ___ cigars

26. What size cigar do you usually smoke? Or, if you have stopped, what size did you usually smoke before you stopped?

Check only one
1 ☐ Cigarillos (little cigars)
2 ☐ Medium
3 ☐ Large
4 ☐ More than one size

27. What brand of cigars do you currently smoke? Or, if you have stopped smoking cigars, what brand did you smoke most recently? ______________________________

28. How much of the cigar do you usually smoke? Or, if you have stopped, how much did you usually smoke before you stopped?

Check only one
1 ☐ More than ¾
2 ☐ ½ to ¾
3 ☐ Less than ½

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44. Have you ever smoked marijuana?

1 ☐ No
2 ☐ Yes, but only once or twice in my lifetime
3 ☐ Yes, 3-6 times in my lifetime
4 ☐ Yes, more than 6 times in my lifetime

If Yes, more than 6 times in lifetime, answer questions 45-47.
If No, or if marijuana smoked 6 times or less in lifetime, skip to question 48.

45. Do you currently smoke marijuana?

1 ☐ Yes
2 ☐ No

46. How often do you smoke it? Or, if you no longer smoke it, how often did you smoke it before you stopped?

Check only one

1 ☐ Almost every day, usually in large amounts
2 ☐ Almost every day, sometimes in large amounts
3 ☐ About once or twice a week, sometimes in large amounts
4 ☐ About once or twice a week, never in large amounts
5 ☐ About once or twice a month, sometimes in large amounts
6 ☐ About once or twice a month, never in large amounts
7 ☐ Less than once a month
8 ☐ Other, describe ______________________________

47. Altogether, how many years have you smoked marijuana? (If less than 6 months, write in 00) ___ ___ years

48. In the past year, did you see a doctor outside Kaiser?

1 ☐ Yes
2 ☐ No

If Yes, how many times? ___ ___ times

For what condition(s)? ______________________________

____

49. In the past year, have you been a patient overnight in a hospital outside Kaiser?

1 ☐ Yes
2 ☐ No

If Yes, how many times? ___ ___ times

For what condition(s)? ______________________________

____

50. In the past year, how many days were you so ill with a minor illness, such as cold, flu, sore throat, etc., that you were unable to perform your usual work or activity? (If none, write in 000) ___ ___ ___ days

51. In the past year, how many days were you so ill with a major illness, such as heart attack, cancer, pneumonia, major operation, etc., that you were unable to perform your usual work or activity? (If none, write in 000) ___ ___ ___ days

52. What is your race?

1 ☐ Black
2 ☐ White
Oriental/Asian
3 ☐ Japanese 4 ☐ Chinese 5 ☐ Filipino 6 ☐ Other Oriental/Asian
7 ☐ Other, Specify ______________________________

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HEALTH INSURANCE STUDY SMOKING BATTERY

TYPE OF MEASURE: Behavioral

OUTCOME ASSESSED: Refraining from Smoking

TARGET POPULATION: Adults or adolescents

GENERAL DESCRIPTION:

The Health Insurance Study Smoking Battery is designed to serve as a proxy measure of future health status. The measure is described to be sensitive to each of the following five outcomes: (1) smokers quit smoking, (2) cigarette smokers reduce the amount smoked, (3) nonsmokers and ex-smokers remain so (i.e., do not begin or resume smoking), (4) cigarette smokers become pipe and/or cigar smokers, and (5) cigarette smokers switch to a lower tar cigarette (without increasing the amount smoked). The measure consists of ten items such as, "Do you smoke cigarettes now?" and "On the average, about how many packs a day do you smoke now?" plus supplemental smoking items that elicit information about the size and type of cigarettes usually smoked. A mortality ratio (or estimate of future risk) is assigned to each respondent based on the respondent's smoking status. (See Instructions for Scoring.) The instrument may be administered periodically to measure the health risk reduction achieved as respondents adopt one or more of the desirable outcomes listed above.

TECHNICAL INFORMATION:

Although no formal analyses of the reliability or validity of the Health Insurance Study Smoking Battery are reported, its authors discuss indirect evidence supporting the reliability and validity of the measure.

AUTHORS: Anita L. Stewart, Robert H. Brook and Robert L. Kane
Rand Corporation, Santa Monica, California

ADDITIONAL INFORMATION:

Stewart, A.L., Brook, R.H., and Kane, R.L. Conceptualization and measurement of health habits for adults in the health insurance study: volume 1, smoking. Santa Monica, California: Rand Corporation, June 1979, (Publication No. R-2374/1-HEW).

HEALTH INSURANCE STUDY
SMOKING BATTERY

Version Two

Item	Content	Response
37.	Do you smoke cigars or a pipe now?	1 - yes 2 - no
38.	Do you smoke cigarettes now?	1 - yes 2 - no
38-A.	During how many years have you smoked cigarettes regularly?	1 - less than 2 years 2 - 2-5 years 3 - 6-10 years 4 - 11-15 years 5 - 16-20 years 6 - 21-25 years 7 - 26-30 years 8 - 31-35 years 9 - 36-40 years 0 - more than 40 years
38-B.	On the average, about how many packs a day do you smoke now?	1 - less than 1 pack a day 2 - about 1 pack a day 3 - about 2 packs a day 4 - more than 2 packs a day
38-C	Has a doctor ever told you to stop smoking?	1 - yes 2 - no
39.	Have you ever smoked cigarettes fairly regularly?	1 - yes 2 - no
39-A.	During how many years did you smoke cigarettes regularly?	1 - less than 2 years 2 - 2-5 years 3 - 6-10 years 4 - 11-15 years 5 - 16-20 years 6 - 21-25 years 7 - 26-30 years 8 - 31-35 years 9 - 36-40 years 10 - more than 40 years
39-B.	On the average, about how many packs a day did you used to smoke?	1 - less than 1 pack a day 2 - about 1 pack a day 3 - about 2 packs a day 4 - more than 2 packs a day

Version Two

Item	Content	Response
39-C.	How long has it been since you smoked cigarettes regularly?	1 - 6 months or less 2 - 7 months to 1 year 3 - more than 1 year to 2 years 4 - more than 2 years to 5 years 5 - more than 5 years
39-D.	Did a doctor ever tell you to stop or cut down on your smoking?	1 - yes 2 - no

SUPPLEMENTAL SMOKING ITEMS

(Circle one)

1. What type of cigarette do you usually smoke--filter or nonfilter?

Filter 1
Nonfilter 2

(Circle one)

2. What size cigarette do you usually smoke?

Regular 1
King size 2
100 or 120 mm 3

3. Which brand of cigarette do you usually smoke? (Circle one)

Alpine	1
American Lights	2
American Longs	3
Belair	4
Benson & Hedges	5
Bull Durham	6
Camel	7
Carlton	8
Chesterfield	9
Domino	10
Doral	11
DuMaurier	12
Eagle 20's	13
English Ovals	14
Eve	15
Fact	16
Fatima	17
Galaxy	18
Half & Half	19
Hallmark	20
Herbert Tareyton	21
Hi-Lite	22
Home Run	23
Iceberg 100's	24
Kent	25
Kent Golden Lights	26
King Sano	27
Kool	28
Kool Naturals or Milds	29
L & M	30
L & M Lights	31
L. T. Brown	32
Lark	33
Long Johns	34
Lucky Strike	35
Lucky Ten	36
Lucky 100's	37
Mapleton	38
Marlboro	39
Marlboro Lights	40
Max	41
Merit	42
Montclair	43
More	44
Multifilter	45
Newport	46
Now	47
Oasis	48
Old Gold	49
Pall Mall	50
Pall Mall Extra Mild	51
Parliament	52
Philip Morris	53
Philip Morris Int's	54
Picayune	55
Piedmont	56
Players	57
Raleigh	58
Raleigh Lights	59
St. Moritz	60
Salem	61
Salem Lights	62
Sano	63
Saratoga	64
Silva Thins	65
Spring 100's	66
Stratford	67
Tall	68
Tareyton	69
Tempo	70
True	71
Twist	72
Vanguard	73
Vantage	74
Vello	75
Viceroy	76
Virginia Slims	77
Winston	78
Winston Lights	79
Other (Specify)________	80

INSTRUCTIONS FOR SCORING
HEALTH INSURANCE STUDY SMOKING BATTERY

Mortality Ratio	Smoking Status
1.00	Never smoked or ex-smoker
1.06	Pipe and/or cigar smoker only
1.57	Current cigarette smoker: less than one pack a day
1.79	Current cigarette smoker: about one pack a day
2.07	Current cigarette smoker: about two packs a day
2.20	Current cigarette smoker: more than two packs a day

Cigarette smoking status should be determined. The amount of cigarettes smoked each day should be scored. Mortality ratios can be used to represent an estimate of future risk of poor health. The type of tobacco currently smoked can be compared as a categorical measure. Altered health risks will be reflected by changes in any one or more of these variables.

Frequency distributions of responses to the smoking battery items for adults ages 14 to 74 in the Health Insurance Study are available in the corresponding publication (see Additional Information section) from the Rand Corporation.

DO YOU WANT TO CHANGE YOUR SMOKING HABITS? (Test 1)

TYPE OF MEASURE: Affective

OUTCOME ASSESSED: Perceived Consequences of Smoking

TARGET POPULATION: Adults or Adolescents (current smokers)

GENERAL DESCRIPTION:

This questionnaire assesses whether or not individuals perceive the consequences of smoking as important enough to alter smoking habits. Respondents are asked to circle the number from 1 (completely disagree) to 4 (completely agree) that most accurately indicates how they feel about each statement related to: concern over effects of smoking on health; desire to set an example for others; recognition of the unpleasant esthetic effects of smoking; and desire to exercise self-control. A total for each category is obtained by adding the scores. The totals are then used to indicate the important reasons to abstain from smoking or to stop smoking.

AUTHORS:

Daniel Horn and staff
National Clearinghouse for Smoking and Health
Public Health Service, U.S. Department of Health, Education, and Welfare

ADDITIONAL INFORMATION:

This measure is Test 1 in a series of 4 tests published as the Smoker's Self-Testing Kit. The booklet is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402. Requests should include stock number 017-001-00180-5.

TEST 1

DO YOU WANT TO CHANGE YOUR SMOKING HABITS?

For each statement, circle the number that most accurately indicates how you feel. For example, if you completely agree with the statement, circle 4, if you agree somewhat, circle 3, etc.

Important: Answer every question.

	completely agree	somewhat agree	somewhat disagree	completely disagree
A. Cigarette smoking might give me a serious illness.	4	3	2	1
B. My cigarette smoking sets a bad example for others.	4	3	2	1
C. I find cigarette smoking to be a messy kind of habit.	4	3	2	1
D. Controlling my cigarette smoking is a challenge to me.	4	3	2	1
E. Smoking causes shortness of breath.	4	3	2	1
F. If I quit smoking cigarettes it might influence others to stop.	4	3	2	1
G. Cigarettes cause damage to clothing and other personal property.	4	3	2	1
H. Quitting smoking would show that I have willpower.	4	3	2	1
I. My cigarette smoking will have a harmful effect on my health.	4	3	2	1
J. My cigarette smoking influences others close to me to take up or continue smoking.	4	3	2	1
K. If I quit smoking, my sense of taste or smell would improve.	4	3	2	1
L. I do not like the idea of feeling dependent on smoking.	4	3	2	1

HOW TO SCORE:

1. Enter the numbers you have circled to the Test 1 questions in the spaces below, putting the number you have circled to Question A over line A, to Question B over line B, etc.
2. Total the 3 scores across on each line to get your totals. For example, the sum of your scores over lines A, E, and I gives you your score on *Health*—lines B, F, and J give the score on *Example*, etc.

						Totals
______	+	______	+	______	=	______
A		E		I		Health
______	+	______	+	______	=	______
B		F		J		Example
______	+	______	+	______	=	______
C		G		K		Esthetics
______	+	______	+	______	=	______
D		H		L		Mastery

Scores can vary from 3 to 12. Any score 9 and above is *high;* any score 6 and below is *low.* Learn from Part 2 what your scores mean.

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TEST 1. Do You Want to Change Your Smoking Habits?

Why do you want to quit smoking? Are your reasons strong enough for you to make the effort to quit? Do you have enough reasons? This is something only you can decide.

Four common reasons for wanting to quit smoking cigarettes are: Concern over the effects on *health;* desire to set an *example* for others; recognition of the unpleasant aspects (the *esthetics*) of smoking; and desire to exercise *self-control.*

Test 1 of the Smoker's Self-Testing Kit was designed to measure the importance of each of these reasons to you. The higher you score on any category, say *health*, the more important that reason is to you. A score of 9 or above in one of these categories indicates that this is one of the most important reasons why you may want to quit.

1. HEALTH

Research during the past 10 or 15 years has shown that cigarette smoking can be harmful to health. Knowing this, many people have recently stopped smoking and many others are considering it. If your score on the *health* factor is 9 or above, the health hazards of smoking may be enough to make you want to quit now.

If your score on this factor is low (6 or less), look at your scores on Test 2. They tell how much you know about the health hazard. You may be lacking important information or may even have incorrect information. If so, health considerations are not playing the important *role* they should in your decision to keep on smoking or to quit.

2. EXAMPLE

Some people stop smoking because they want to set a good example for others. Parents do it to make it easier for their children to resist starting to smoke; doctors do it to influence their patients; teachers want to help their students; sports stars want to set an example for their young fans; husbands want to influence their wives, and vice versa.

Such examples are an important influence on our behavior. Research shows that almost twice as many high school students smoke if both parents are smokers compared to those whose parents are nonsmokers or former smokers.

If your score is low (6 or less), it may mean that you are not interested in giving up smoking in order to set an example for others. Perhaps you do not appreciate how important your example could be.

3. ESTHETICS (the unpleasant aspects)

People who score high, that is, 9 or above, in this category, recognize and are disturbed by some of the unpleasant aspects of smoking. The smell of stale smoke on their clothing, bad breath, and stains on their fingers and teeth might be reason enough to consider breaking the habit.

4. MASTERY (self-control)

If you score 9 or above on this factor, you are bothered by the knowledge that you cannot control your desire to smoke. You are not your own master. Awareness of this challenge to your self-control may make you want to quit.

Summary of Test 1

Test 1 has measured your attitude toward four of the most common reasons why people want to quit smoking. Consider those that are important to you. Even if none are important, you still may have a highly personal reason for wanting to change your habit. All in all, you may now see that you have reasons enough to want to quit smoking.

If you are still not sure, study the interpretation of your scores on Test 2 (the next test) to determine what you know about the effects of smoking on your health and what part that knowledge may play in your decision.

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SMOKING SITUATIONS

TYPE OF MEASURE: Affective

OUTCOME ASSESSED: Perceived Ability to Refrain from Smoking

TARGET POPULATION: Adults or Adolescents (current or former smokers)

GENERAL DESCRIPTION:

The self-efficacy scale, Smoking Situations, measures an individual's perceived ability to refrain from smoking in various situations. The measure presents a series of situations that often lead people to smoke. Respondents are asked to use a scale from 1 (not at all) to 5 (extremely) to indicate for each situation (A) how tempted they would be to smoke, and (B) their confidence about refraining from smoking. Scores on individual items are added to obtain summary scores for temptation and confidence (self-efficacy). The measure has been used on a pretest and posttest basis to evaluate treatment and to predict relapse potential.

TECHNICAL INFORMATION:

The authors describe a study in which the measure was administered to 900 volunteer subjects classified into five categories according to their current smoking status, for example, long-term quitters and relapsors. Subjects were initially assessed with the measure, then re-assessed several months later. Subjects' scores on the initial administration of the measure were consistent with the five-part categorizations. Shifts in subjects' smoking status during the test-retest period were, in several instances, consonant with predictions based on their initial scores.

The current 31-item version of this scale was expanded from a 12-item scale previously demonstrated to predict maintenance of smoking cessation. The 31-item measure was subjected to a principal component factor analysis which yielded four major factors accounting for 82 percent of the variance.

AUTHORS: Carlo C. DiClemente
Texas Research Institute of Mental Sciences

James O. Prochaska
University of Rhode Island

ADDITIONAL INFORMATION:

DiClemente, C.C. & Prochaska, J.O. Self-efficacy and the stages of self-change of smoking. Los Angeles: a symposium presentation at the annual meeting of the American Psychological Association, August 1981.

SMOKING SITUATIONS

Listed below are situations that lead some people to smoke. We would like to know:

A) How tempted you may be to smoke in each situation, AND

B) How confident you would be that you would not smoke.

Please check the boxes that best describe your feelings in each situation.

A. How tempted would you be to smoke in this situation?					Situation	B. How confident are you that you would not smoke in this situation?				
1 Not at All	2 Not Very	3 Moderately	4 Very	5 Extremely		1 Not at All	2 Not Very	3 Moderately	4 Very	5 Extremely
					1. When alone and feeling depressed.					
					2. When I am nervous.					
					3. With friends at a party.					
					4. Over coffee while talking and relaxing.					
					5. With my spouse or a close friend who is smoking.					
					6. At work when I am experiencing some pressure in my job.					
					7. At a bar or cocktail lounge having a drink.					
					8. When I wake up in the morning and face a tough day.					
					9. When I am happy and celebrating.					

A.
How tempted would you be to smoke in this situation?

B.
How confident are you that you would not smoke in this situation?

A. 1 Not at All	A. 2 Not Very	A. 3 Moderately	A. 4 Very	A. 5 Extremely	Situation	B. 1 Not at All	B. 2 Not Very	B. 3 Moderately	B. 4 Very	B. 5 Extremely
					10. When I am bored and have nothing to do.					
					11. When I would experience an emotional crisis, such as an accident or death in the family.					
					12. When I see that I am gaining weight.					
					13. When I am angry at someone close to me.					
					14. When I am desiring a cigarette.					
					15. When I am craving a cigarette.					
					16. When I am extremely anxious and stressed.					
					17. When I am frustrated about events in my life.					
					18. When I am feeling warm and affectionate with my spouse/lover.					
					19. When I am feeling accepted and close to someone.					
					20. When I am very angry about something or someone.					
					21. When things are just not going the way I want and I am frustrated.					
					22. When there are arguments and conflicts with my family.					

A. How tempted would you be to smoke in this situation?					Situation	B. How confident are you that you would not smoke in this situation?				
1 Not at All	2 Not Very	3 Moderately	4 Very	5 Extremely		1 Not at All	2 Not Very	3 Moderately	4 Very	5 Extremely
					23. When I see someone smoking and enjoying it.					
					24. When I am in a social situation with a group of people I do not know well.					
					25. When others around me are smoking at work.					
					26. When I begin to let down on my concern about my health and am less physically active.					
					27. When I am really missing the smoking habit and all that goes with it.					
					28. When I want to test my control over cigarettes and smoke just one cigarette.					
					29. When I realize that quitting smoking is an extremely difficult task for me.					
					30. When I am extremely depressed.					
					31. When I just don't give a darn about anything.					

SMOKING SELF-EFFICACY QUESTIONNAIRE (SSEQ)

TYPE OF MEASURE: Affective

OUTCOME ASSESSED: Perceived Ability to Refrain from Smoking

TARGET POPULATION: Adults or Adolescents (current or former smokers)

GENERAL DESCRIPTION:

The Smoking Self-Efficacy Questionnaire (SSEQ) is designed to assess individuals' perceived self-efficacy in being able to resist urges to smoke. Individuals are presented with a series of items describing situations in which people often experience an urge to smoke. Respondents are asked to indicate if they can refrain from smoking in each situation. If they indicate that they can refrain, they are then asked to estimate on a scale of 10 to 100, how confident they are of their ability to refrain from smoking in that situation.

TECHNICAL INFORMATION:

The authors describe a systematic attempt to isolate situations in which respondents would encounter substantial difficulty in resisting smoking. In an effort to support the content validity of the 23-item instrument, two separate surveys were made to identify high-temptation situations for smokers. It should be noted that the bulk of the validation data is based on the first seventeen items of scale. The remaining six items (18-23) are experimental items which should not be included in the data analyses conducted when the scale is administered. In both investigations, each involving approximately 30 smokers, scores on the measure were shown to be highly predictive of future smoking behavior. Eighty-two percent of the subjects displayed future smoking behavior in accord with predictions derived from their scores on the measure. A second, larger validation study involving an additional 57 subjects showed further evidence for the incremental utility and the predictive, content, and discriminant validities of the scale.

AUTHORS:

Gep Colletti and Jay A. Supnick
Department of Psychology, State University of New York at Binghamton

ADDITIONAL INFORMATION:

Colletti, G., Supnick, J.A., & Rizzo, A.A. Part II: Measurement of self-efficacy in high-risk smoking situations. Los Angeles: a symposium presentation at the annual meeting of the American Psychological Association, August 1981.

Colletti, G., Supnick, J.A. & Payne, T.J. The smoking self-efficacy questionnaire (SSEQ): scale validation. Manuscript submitted for publication, 1982.

SELF-EFFICACY QUESTIONNAIRE

NAME: ______________________________ DATE: __________________

Smoking Reduction Clinic
Department of Psychology
SUNY-BINGHAMTON

Colletti and Supnick

The following paragraphs are descriptions of situations in which people with smoking problems often find it very difficult not to smoke. If you are trying to stop, they may be the situations in which you are likely to give up. If you are in a smoking reduction program, they may be situations in which you are most likely to forget or ignore program instructions about how to reduce your smoking habit.

First, read each description and as vividly as possible try to imagine yourself in that situation. Then assess whether you expect that in this situation you could control your smoking behavior and remain on your reduction program. Write down "YES", meaning "I could control my smoking behavior" or "NO", meaning "I could not control my smoking behavior" in the blank marked "CAN DO".

If you answer "YES", then please assess how confident you are that you could control your smoking behavior. Using the numbers from the scale 10 to 100 printed at the top of each page, choose one which expresses your degree of confidence, and write that number down in the blank marked "CONFIDENCE".

Some of the exact details of a situation may not apply to you- such as smoking while drinking coffee, but the description may be similar to a situation you do experience, smoking while drinking alcohol. You can assess that instead. If the situation is not one you would ever experience, you can place an X in the "CAN DO" blank and go on to the next item.

Practice Rating - to familiarize you with this type of rating, please complete these practice itmes first.

Confidence Scale

10	20	30	40	50	60	70	80	90	100
Quite Uncertain				Moderately Certain					Absolutely Certain

Physical strength		CAN DO	CONFIDENCE
EXAMPLE:	Lift a 1 pound box	YES	100
	Lift a 5 pound box		
	Lift a 10 pound box		
	Lift a 50 pound box		
	Lift a 100 pound box		

CONFIDENCE

10	20	30	40	50	60	70	80	90	100
Quite Uncertain				Moderately Certain				Absolutely Certain	

	DOES NOT APPLY	CAN DO	CONFIDENCE
1. You just returned from an important exam and you "know" you have done poorly.	____	____	____
2. A planned date stands you up. You are disappointed and begin to blame yourself.	____	____	____
3. You have had a fight with your boyfriend, girlfriend, spouse, or any friend and you are angry and upset.	____	____	____
4. You have been out for an evening, you feel relaxed and want to end the evening with a smoke.	____	____	____
5. You have just finished dinner in a good restaurant on a special occasion. Everyone orders coffee and your friends all sit back to enjoy a cigarette.	____	____	____
6. You are out with friends who are smoking a lot. You don't want them to know that you are on a smoking reduction program.	____	____	____
7. You just came home from a really rough day at school or work. The whole day was filled with anxiety, frustration, and failures.	____	____	____
8. You are sitting at home alone, in a bad mood, thinking about the problems and failures in your life.	____	____	____

Self-Efficacy Questionnaire
Page 3

Below is a list of activities during which smokers often report they habitually smoke. As above, please indicate whether you feel confident that you could participate in these activities and control or eliminate your smoking and thus remain on a smoking reduction program.

CONFIDENCE

10	20	30	40	50	60	70	80	90	100
Quite Uncertain				Moderately certain				Absolutely Certain	

	DOES NOT APPLY	CAN DO	CONFIDENCE
9. watching television (e.g. sport event)	____	____	____
10. studying	____	____	____
11. reading a novel or magazine	____	____	____
12. attending a sports or entertainment event	____	____	____
13. talking on the phone	____	____	____
14. drinking coffee/other non-alcoholic beverages	____	____	____
15. after a meal	____	____	____
16. talking or socializing	____	____	____
17. playing cards	____	____	____

Please rate the degree to which you believe you could perform the behavior described in the following situations.

18. You have just finished your first cigarette after not smoking for almost 3 weeks. You are upset with yourself but you decide to record your next cigarette (if you take one) as you did during the course to help keep you from going back to smoking.	____	____	____
19. You are talking with a friend who takes out a cigarette. You have not had a cigarette for 3 days. Your friend's cigarette looks good, but you also want to stop smoking completely. So, you ask your friend not to smoke in front of you.	____	____	____

Self-Efficacy Questionnaire
Page 4

CONFIDENCE

10	20	30	40	50	60	70	80	90	100
Quite Uncertain				Moderately certain				Absolutely Certain	

	DOES NOT APPLY	CAN DO	CONFIDENCE
20. You have been off cigarettes for several weeks, but you are losing your motivation to continue resisting the urge to have a cigarette. You decide to call your group leader for some support and suggestions.	____	____	____
21. You have just found some cigarettes lying around the house and smoked one. It tasted good, but you know you shouldn't have another, so you throw away the remaining cigarettes and decide you need to try harder to resist the urge next time.	____	____	____
22. You have just finished dinner, feel a bit drowsy, and really want a cigarette, but you haven't had one in several weeks. Instead of a cigarette you decide to take a walk to wake yourself up.	____	____	____
23. You want a cigarette desperately but you haven't smoked in such a long time and you don't want to blow it. Instead of taking a cigarette you decide to treat yourself by buying something special with some of the money you have saved from not buying cigarettes.	____	____	____

POSTTREATMENT CONFIDENCE QUESTIONNAIRE

TYPE OF MEASURE: Affective

OUTCOME ASSESSED: Perceived Ability to Refrain from Smoking

TARGET POPULATION: Adults or Adolescents (current or former smokers)

GENERAL DESCRIPTION:

The Posttreatment Confidence Questionnaire is designed to assess the magnitude, strength, and generality of individuals' expectations to resist the urge to smoke in various situations. Individuals are presented with a list of situations in which people frequently smoke. They are asked to circle the number (from 0% to 100%) that best describes their confidence in their own ability to resist the urges to smoke in each situation. The confidence percentages are then used as self-efficacy ratings. High or low self-efficacy ratings have been used to predict overall smoking cessation or potential relapse prior to and/or following treatment intervention.

TECHNICAL INFORMATION:

To secure reliable groupings of situations (items) from the measure, pre-treatment responses of 78 cigarette smokers were subjected to a cluster analytic procedure. Seven moderately intercorrelated clusters emerged ranging from two to twelve items. Alpha reliability coefficients for the seven clusters of items ranged from .69 to .94.

AUTHORS:

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ADDITIONAL INFORMATION:

Condiotte, M.M., & Lichtenstein, E. Self-Efficacy and relapse in smoking-cessation programs. Journal of Consulting and Clinical Psychology, 1981, 49(2), 648-658.

POSTTREATMENT CONFIDENCE QUESTIONNAIRE

Name ______________________________ Date ____________ Time _____

Below is a list of 46 situations in which people frequently smoke. Please read each one carefully. Then circle the number underneath which best describes THE PROBABILITY THAT YOU WILL BE ABLE TO RESIST THE URGE TO SMOKE IN THAT SITUATION IN THE FUTURE IF THE SITUATION ARISES. If you are absolutely certain that you will not smoke in that situation, if it should arise, circle 100%. If you have no confidence in your ability to resist a cigarette in the future, in a given situation, circle 0%. More likely your confidence will vary. For example, if you are pretty sure that you will be able to resist the urge to smoke if and when you are drinking coffee or tea in the future, but not absolutely certain, you might circle 80%. If, on the other hand, you are pretty sure you would not be able to resist a cigarette if that situation arises, but not absolutely sure you couldn't you might circle 20%.

1. When you feel really happy

   0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

2. When you feel anxious

   0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

3. When you want to sit back and enjoy a cigarette

   0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

4. When you have finished a meal or snack

   0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

5. When you want to keep yourself busy

   0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

6. When you are nervous

   0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

7. When you want to feel more attractive

   0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

8. When you feel annoyed

   0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

9. When you want to relax

   0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

10. When you simply become aware of the fact that you are not smoking

    0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

11. When you are trying to pass time

    0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

12. When you are worried

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

13. When you are in a situation in which you feel smoking is a part of your self-image

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

14. When you feel angry

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

15. When you feel tired

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

16. When you feel embarrassed

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

17. When you feel bored

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

18. When you want to have time to think in a conversation

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

19. When you feel restless

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

20. When you want something to do with your hands

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

21. When you want to concentrate

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

22. When you want something in your mouth

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

23. When you want to keep yourself busy

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

24. When you feel tense

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

25. When you feel you need more energy

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

26. When you are resting

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

27. When you are drinking an alcoholic beverage

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

28. When you feel oversensitive

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

29. When you see others smoking

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

30. When you feel impatient

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

31. When you want to reward yourself for something you've done or tell yourself that you can have a cigarette if you complete some task

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

32. When someone offers you a cigarette

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

33. When you are waiting for someone or something

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

34. When you feel uncomfortable

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

35. When you want to cheer up

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

36. When you want to avoid eating sweets

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

37. When you feel depressed

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

38. When you want to feel more mature and sophisticated

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

39. When you want to take a break from work or some other activity

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

40. When you want to keep slim

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

41. When you are overly excited

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

42. When you feel upset

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

43. When you light up a cigarette to go along with some activity you are doing (for example; while fixing a bicycle, writing a letter, doing housework...)

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

44. When you are drinking coffee or tea

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

45. When you feel frustrated

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

46. When you are angry with yourself

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

47. What is the probability that you will be able to resist the urge to smoke altogether in the future, regardless of the situation?

0% - 10% - 20% - 30% - 40% - 50% - 60% - 70% - 80% - 90% - 100%

48. If you should happen to smoke a cigarette in the future, to what extent would this upset you? Please circle the number underneath which best describes how upset you would be

NOT UPSET AT ALL	1	2	3	4	5	6	7	8	9	10	EXTREMELY UPSET WITH MYSELF
					MODERATELY UPSET						

49. If you should happen to smoke a cigarette in the future, to what extent would you consider this an unimportant slip as opposed to a failure to give up your smoking habit?

UNIMPORTANT SLIP "I STILL HAVE CONFIDENCE IN MY ABILITY TO REMAIN AN EXSMOKER"	1	2	3	4	5	6	7	8	9	10	FAILURE "I AM A CIGARETTE SMOKER AGAIN"

CHAPTER SEVEN

TEST SPECIFICATIONS

This chapter contains the test specifications for all the newly developed measures presented in Chapter Five. The specifications are arranged in the same order as that chapter's measures, that is, behavior first, followed by knowledge, skill, and affect.

COMPONENTS OF TEST SPECIFICATIONS

Test specifications describe in detail both what an instrument measures and the manner in which the assessment is accomplished. Each set of test specifications begins with a General Description that presents a brief overview of the scope and nature of the measure to be specified. A Sample Item follows, showing a typical item contained in the measure and the directions to respondents that accompany the instrument. The Stimulus Attributes section lists the rules that explain how the items for the measure are to be constructed. The Response Attributes section lists the rules that explain how the response options for the measure are to be constructed.

Many of the sets of specifications have one or more additional sections. A Technical Terms Supplement lists content-specific words that exceed the normal readability restrictions of a measure but are used because of their importance. A Specifications Supplement, contained in all knowledge test specifications, presents an exhaustive listing of the content eligible for testing. Knowledge test specifications also contain a Bibliography which cites the references consulted in developing the content listing. Behavioral and affective test specifications include a Scoring and Interpretation section which explains the rationale and procedures to be employed when using the measure's data. Some test specifications also include a section entitled Measure Format that presents an item-by-item overview of the measure itself, highlighting the different variables represented by each item.

TEST SPECIFICATIONS
SMOKING QUESTIONNAIRE

GENERAL DESCRIPTION

Individuals are asked about their smoking behavior to determine if they currently smoke. This information can be used as a measure of how effectively a program has aided participants in abstaining from smoking. For individuals who indicate that they do currently smoke, this measure elicits the specific characteristics of that smoking behavior, including substance, frequency, and topography, in order to measure progress towards the goal of complete abstention.

SAMPLE ITEM

Please answer the following questions as carefully as you can.

1. Have you smoked any cigarettes during the past week?

____ a. Yes
____ b. No

STIMULUS ATTRIBUTES

1. An item will ask about a characteristic of an individual's smoking behavior. That behavior will be limited to the specified time period of one week and to the use of cigarettes, cigars, and pipes.

2. A branching format will be used so that individuals respond only to questions appropriate to their smoking behavior. For example, someone who has not smoked a cigarette would not be asked to respond to questions regarding the manner in which cigarettes are smoked.

3. The following information will be elicited from those individuals who report that they have smoked cigarettes:

    a. The average number of cigarettes smoked each day

    b. The brand of cigarette smoked most frequently

    c. The characteristics of the cigarettes smoked (i.e., filter or non-filter, length, tar and nicotine level, mentholated or plain)

    d. The depth of inhalation

    e. How far down a cigarette is allowed to burn

    f. How much of a cigarette burns without being smoked

4. The following information will be elicited from those individuals who report that they have smoked cigars or pipes:

    a. The average number of cigars smoked each day

    b. The average number of pipefuls of tobacco smoked each day

    c. The depth of inhalation of cigars and/or pipes

5. Each question will be 25 words or less in length. The words used will not exceed the eighth grade level on the IOX Basic Skills Word List, except for the following technical terms: millimeter, nicotine, mentholated.

RESPONSE ATTRIBUTES

1. All items will be either forced-choice or open-ended.

2. Forced-choice items will require the individual to respond "Yes" or "No" or to select the response that best characterizes an aspect of that individual's smoking behavior.

3. Open-ended questions will be used to elicit information that is not readily categorized, such as the brand name of cigarette smoked or the quantity of a tobacco product that is consumed.

INTERPRETATION

1. The responses to the questionnaire should permit program personnel to assess the current smoking behavior of respondents in order to determine whether individuals are abstaining from or have stopped smoking.

2. In addition to information about abstention or cessation, program personnel will be able to obtain information about substance, frequency, and topography for those individuals who continue to smoke. Changes in these critical characteristics can also be monitored as evidence of progress towards the goal of complete abstention.

3. If desired, program personnel can change the survey's specified time period of a week in order to focus data collection efforts on a shorter period (e.g., one day) for more detailed monitoring, or on a longer period (e.g., one month) for monitoring more general trends in behavior. Such a change can be made without altering the basic content or format of the instrument.

TEST SPECIFICATIONS

QUESTIONS ABOUT YOU

GENERAL DESCRIPTION

Children will be asked about their smoking behavior to determine if they smoke, how many cigarettes they smoke, and whether or not they inhale when they smoke. Responses can be used as a measure of the extent of smoking behavior among elementary school-age children.

SAMPLE ITEM

> **There are two questions below. Please answer both of them. For each question, put a check next to your answer. Your answers will be kept secret, so please tell the truth.**

1. Last week, about how many cigarettes did you smoke each day?

    ____a. I didn't smoke

    ____b. 1-5

    ____c. 6-10

    ____d. 11-20

    ____e. More than 20

STIMULUS ATTRIBUTES

1. The following information will be elicited from all respondents:

    a. The approximate number of cigarettes smoked each day.

    b. The extent to which respondents inhale if they smoke.

2. Each question will be 12 words or less in length. The words used will not exceed the fourth grade level on the IOX Basic Skills Word List, except for the following technical terms: cigarettes, inhale.

RESPONSE ATTRIBUTES

1. All items will be forced-choice and require individuals to place a check next to the response that best characterizes their smoking behavior.

INTERPRETATION

1. The responses to the questionnaire should permit program personnel to determine if respondents are abstaining from smoking.
2. The responses to the questionnaire will also provide information about two critical characteristics of smoking behavior for those respondents who do smoke. These characteristics are the number of cigarettes smoked and the extent to which the smoker inhales.

TEST SPECIFICATIONS

SMOKING AND ITS EFFECTS

GENERAL DESCRIPTION

Individuals are presented with statements about biomedical, economic, and social consequences of smoking behavior. Individuals indicate whether each statement is true or false.

SAMPLE ITEM

This test consists of 20 statements about the effects of smoking. Some of the statements are true and some are false. If you think a statement is true, put a check in the column labeled TRUE. If you think a statement is false, put a check in the column labeled FALSE.

TRUE	FALSE		
____	____	1.	More people gain weight than lose weight after giving up smoking.

STIMULUS ATTRIBUTES

1. A test item will consist of a single-sentence statement that the individual is to judge as true or false. This statement will contain information related to a potential biomedical, economic, or social consequence of smoking.

2. All test items will be derived from the specifications supplement Smoking and its Effects. This supplement presents statements about smoking which are based upon either empirical evidence or expert consensus. The statements are organized into sections, with each section containing information about one aspect of the consequences of smoking.

3. Each statement on the supplement consists of one main idea related to the effects of smoking. A statement either (a) describes the nature or effects of a particular subject, (b) compares two subjects with respect to a particular attribute, or (c) presents a correlational or causal relationship between two subjects.

4. A test item will be based on a single statement selected from the supplement. If the supplement statement contains multiple parallel elements, only one of the elements will be used in the test item.

   Example of a supplement statement with multiple parallel elements

   Cigarette smoking increases the risk of developing cancer of the lung, larynx, pharynx, mouth, esophagus, kidney, pancreas, and bladder.

5. A test item will present a supplement statement in either accurate or inaccurate form. An accurate test item can be created in one of the following two ways:

   a. Direct restatement: Reiterating a statement exactly as it appears on the supplement.

   b. Paraphrase: Rephrasing a supplement statement to communicate the same message in different words. This rephrasing may include substituting synonyms for words in the statement and/or reordering words within the statement. The quantitative portion of a supplement statement may not be paraphrased.

      Example of a test item created by paraphrase

      Supplement statement: Millions of workdays are lost each year because of diseases related to cigarette smoking.

      Test Item: Every year, illnesses related to cigarette smoking cause the loss of millions of workdays.

6. An inaccurate test item will be based on a supplement statement or a paraphrase of that statement. An inaccurate item can be created in one of the following two ways:

   a. Negation: Rewording a supplement statement to have the opposite meaning. If the statement is worded positively, negation is accomplished by adding a negative word or phrase to the statement. If the statement is worded negatively, negation is accomplished by taking out a negative word or phrase.

Example of a test item created by negation

Supplement statement: Nicotine causes the heart to beat faster.

Test item: Nicotine does not cause the heart to beat faster.

b. Mutual exclusivity: Transforming a supplement statement to communicate a message that is mutually exclusive with the original message. This transformation can be accomplished by either (1) changing a single verb, adjective, or adverb in the original statement to a word or phrase with a contradictory meaning, (2) changing a comparative statement to either reverse the direction of the comparison made or make both terms being compared equal, or (3) changing a quantitative value to one that is different than the one given. A quantitative change must result in a new value that makes the original statement false, rather than a value that allows the statement to remain true because it represents a subset of the original statement. A quantitative change must be expressed in the same terms as the original value.

Examples of test items created by transformation to a mutually exclusive statement

Supplement statement: Nicotine causes the heart to beat faster.

Test item: Nicotine causes the heart to beat slower.

Supplement statement: Smokers of filter cigarettes are at less risk of developing lung cancer than smokers of non-filter cigarettes.

Test item: Smokers of filter cigarettes are at the same risk of developing lung cancer as smokers of non-filter cigarettes.

Supplement statement: About 10% of all hospital and medical costs in the United States are related to tobacco.

Test item: About 25% of all hospital and medical costs in the United States are related to tobacco.

7. A test item will contain a maximum of 25 words. These words will be no higher than an eighth grade reading level on the IOX Basic Skills Word List. Technical terms not found on the word list may be used only if they are listed on the Technical Terms Supplement.

8. A test will contain an approximately equivalent number of accurate and inaccurate test items. These items will be selected according to the following procedures:

   a. One item will be randomly selected from each section of the supplement.

   b. The rest of the items will be randomly selected from the supplement as a whole.

   c. All of the items will be reviewed by content experts and modified as needed based upon this review.

9. All of the procedures for creating accurate and inaccurate test items will be used as equally as possible, with the exception of negation of a positively-stated supplement statement. This type of change will be used only when no other transformation is possible, as it results in a test item which requires the respondent to recognize that a negatively-stated idea is not accurate, in effect creating a double negative.

RESPONSE ATTRIBUTES

1. Two response columns will be provided. One column will be labeled "TRUE" and the other will be labeled "FALSE."

2. The correct answer to a question will be "TRUE" if the statement is accurate, or "FALSE" if the statement is inaccurate.

SPECIFICATIONS SUPPLEMENT
SMOKING AND ITS EFFECTS

General Biomedical Consequences of Smoking

1. Tobacco smoke consists of dangerous particles and gases.
2. Tar, nicotine, hydrogen cyanide, and carbon monoxide are inhaled when you smoke.
3. Tar consists of numerous chemicals, some of which are believed to cause cancer.
4. Some scientists believe that nicotine is addictive.
5. Nicotine causes blood vessels to decrease in size, which reduces the amount of blood that can be transported.
6. Nicotine causes the heart to beat more rapidly.
7. Hydrogen cyanide damages the respiratory system.
8. Carbon monoxide decreases the amount of oxygen in the blood.

Smoking and Disease

9. The risk of developing coronary heart disease is twice as great for cigarette smokers as for nonsmokers.
10. The risk of developing coronary heart disease increases with the number of cigarettes smoked.
11. Cigarette smoking is directly related to one in every three deaths from cancer.
12. Cigarette smoking increases the risk of developing cancer of the lung, larynx, pharynx, mouth, esophagus, kidney, pancreas, and bladder.
13. The risk of developing lung cancer is ten times greater for cigarette smokers than for nonsmokers.
14. The risk of developing lung cancer increases proportionately with the number of cigarettes smoked each day, the number of years of smoking, and the depth to which the cigarette smoke is inhaled.

15. Cigarette smoking increases the risk of developing lung cancer for both men and women.

16. Cigarette smoking increases the risk of developing chronic bronchitis and emphysema.

Interactive Effects of Smoking

17. Cigarette smoking increases the risk of being harmed by exposure to other dangerous materials such as asbestos or coal dust.

18. Cigarette smoking increases the dangers associated with taking birth control pills.

19. Smokers have an increased risk of developing a respiratory infection after an operation.

20. Cigarette smoking during the later months of pregnancy increases the risk of having a stillborn baby, a baby that dies shortly after birth, and a baby of lower than average birthweight.

21. If a woman smokes during pregnancy, the nicotine and carbon monoxide she inhales enter the blood of the fetus.

22. Cigarette smoking during pregnancy increases the risk of having a baby that will get "sudden infant death syndrome."

Effects of Smoking Filter Cigarettes

23. Smokers of filter cigarettes are four times more likely than nonsmokers to develop lung cancer.

24. Smokers of filter cigarettes are at less risk of developing lung cancer than smokers of non-filter cigarettes.

25. Smokers of filter cigarettes are at less risk of developing respiratory diseases than smokers of non-filter cigarettes.

26. Smokers of most filter cigarettes inhale more carbon monoxide than smokers of non-filter cigarettes.

27. Smokers of most filter cigarettes are probably at greater risk of developing coronary heart disease than smokers of non-filter cigarettes.

Effects of Smoking Low-Tar and Low-Nicotine Cigarettes

28. Death rates are lower for smokers of low-tar and low-nicotine cigarettes than for smokers of high-tar and high-nicotine cigarettes.

29. Death rates are higher for smokers of low-tar and low-nicotine cigarettes than for nonsmokers.

Effects of Smoking Pipes and Cigars

30. Pipe or cigar smokers are less likely than cigarette smokers to develop lung cancer.

31. Pipe or cigar smokers are more likely than nonsmokers to develop lung cancer.

32. Pipe or cigar smokers who inhale while they are smoking are at greater risk of developing lung cancer than pipe and cigar smokers who do not inhale.

33. Pipe or cigar smokers are at the same risk as cigarette smokers of developing cancer of the esophagus, pharynx, larynx, and mouth.

34. Pipe smoking increases the risk of developing lip cancer.

Effects of Quitting Smoking

35. The health risks associated with smoking decrease when a person stops smoking.

36. If a person does not smoke for 10-15 years, that person's chances of developing lung cancer are the same as a nonsmoker's chances.

37. The same number of people lose weight as gain weight after giving up smoking.

38. If a woman stops smoking by the fourth month of her pregnancy, the risks of health problems or death to her infant are probably reduced to the levels of those for nonsmoking women.

Effects of Involuntary Smoking

39. Smokers and nonsmokers can suffer eye irritation, headaches, and nose and throat discomfort from cigarette smoke.

40. Cigarette smoke may fill an enclosed area with higher levels of carbon monoxide and other pollutants than are usually present during an air pollution emergency.

41. Infants whose parents smoke have a greater chance of developing respiratory infections than infants whose parents do not smoke.

Economic and Social Consequences of Smoking

42. Cigarette smoking creates health problems which increase the costs of health insurance and tax-supported health programs.

43. About 10% of all hospital and medical costs in the United States have some relation to tobacco use.

44. Millions of workdays are lost each year because of diseases related to cigarette smoking.

45. If a person smokes more than two packs of cigarettes a day, that person probably spends over $600 each year on cigarettes.

46. Cigarette smoking can leave noticeable stains on a person's teeth.

47. Cigarette smoking can leave a noticeable odor on a person's breath and clothing.

48. Parents who smoke are more likely to have children who smoke than are parents who do not smoke.

49. Teenagers are more likely to smoke if they have lower educational goals and achievement, do not accept the health risks of smoking, and have more smokers than nonsmokers among their friends.

TECHNICAL TERMS SUPPLEMENT

SMOKING AND ITS EFFECTS

addictive
asbestos
bladder
bronchitis
cancer
carbon monoxide
chronic
coronary heart disease
emphysema
esophagus
fetus
hydrogen cyanide
involuntary
irritation
kidney
larynx
lung
newborn
nicotine
oral contraception
pancreas
pharynx
pregnant
respiratory system
stillborn
sudden infant death syndrome

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SMOKING AND ITS EFFECTS

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TEST SPECIFICATIONS
FACTS ABOUT SMOKING

GENERAL DESCRIPTION

Children are presented with statements about health, social, and economic consequences of smoking. Children indicate whether each statement is true or false.

SAMPLE ITEM

This test has 15 statements about smoking. Read each one. If the sentence is true, put a check under the word TRUE. If the sentence is false, put a check under the word FALSE.

TRUE	FALSE		
____	____	1.	Some scientists believe that nicotine is addictive.

STIMULUS ATTRIBUTES

1. A test item will consist of a single-sentence statement that the child is to judge as true or false. This statement will contain information related to either the hazardous substances contained in tobacco or the physical or social consequences of smoking.

2. All test items will be derived from the specifications supplement Facts About Smoking. This supplement presents statements about smoking which are based upon either empirical evidence or expert consensus. The statements are organized into sections, with each section containing information about one aspect of the consequences of smoking.

3. Each statement on the supplement consists of one main idea related to smoking. A statement either (a) describes the nature or effects of a particular subject, (b) compares two subjects with respect to a particular attribute, or (c) presents a correlational or causal relationship between two subjects.

4. A test item will be based on a single statement selected from the supplement. If the supplement statement contains multiple parallel elements, only one of the elements will be used in the test item.

   Example of a supplement statement with multiple parallel elements

   Smoking causes cancer of the lungs, mouth, throat, kidneys, stomach, and many other parts of the body.

5. A test item will present a supplement statement in either accurate or inaccurate form. An accurate test item can be created in one of the following two ways:

   a. Direct restatement: Reiterating a statement exactly as it appears on the supplement.

   b. Paraphrase: Rephrasing a supplement statement to communicate the same message in different words. This rephrasing may include substituting synonyms for words in the statement and/or reordering words within the statement. The quantitative portion of a supplement statement may not be paraphrased.

      Example of a test item created by paraphrase

      Supplement statement: Millions of workdays are lost each year because of illnesses caused by smoking.

      Test Item: Every year, illnesses from cigarette smoking cause the loss of millions of workdays.

6. An inaccurate test item will be based on a supplement statement or a paraphrase of that statement. An inaccurate item can be created in one of the following two ways:

   a. Negation: Rewording a supplement statement to have the opposite meaning. If the statement is worded positively, negation is accomplished by adding a negative word or phrase to the statement. If the statement is worded negatively, negation is accomplished by taking out a negative word or phrase.

      Example of a test item created by negation

      Supplement statement: Nicotine makes the heart beat faster.

Test item: Nicotine does not make the heart beat faster.

b. Mutual exclusivity: Transforming a supplement statement to communicate a message that is mutually exclusive with the original message. This transformation can be accomplished by either (1) changing a single verb, adjective, or adverb in the original statement to a word or phrase with a contradictory meaning, or (2) changing a comparative statement to either reverse the direction of the comparison made or make both terms being compared equal.

Examples of test items created by transformation to a mutually exclusive statement

Supplement statement: Nicotine makes the heart beat faster.

Test item: Nicotine makes the heart beat slower.

Supplement statement: People who smoke are much more likely to have a heart attack than people who don't smoke.

Test item: People who smoke are no more likely to have a heart attack than people who don't smoke.

7. A test item will contain a maximum of 20 words. These words will be no higher than a fourth grade reading level on the IOX Basic Skills Word List. Technical terms not found on the word list may be used only if they are listed on the Technical Terms Supplement.

8. A test will contain an approximately equivalent number of accurate and inaccurate test items. These items will be selected according to the following procedures:

   a. One item will be randomly selected from each section of the supplement.

   b. The rest of the items will be randomly selected from the supplement as a whole.

   c. All of the items will be reviewed by content experts and modified as needed based upon this review.

9. All of the procedures for creating accurate and inaccurate test items will be used as equally as possible, with the exception of negation of a positively-stated supplement statement. This type of change will be used only when no other transformation is possible, as it results in a test item which requires the respondent to recognize that a negatively-stated idea is not accurate, in effect creating a double negative.

RESPONSE ATTRIBUTES

1. Two response columns will be provided. One column will be labeled "TRUE" and the other will be labeled "FALSE."

2. The correct answer to a question will be "TRUE" if the statement is accurate, or "FALSE" if the statement is inaccurate.

SPECIFICATIONS SUPPLEMENT

FACTS ABOUT SMOKING

Hazardous Substance

1. Tar and nicotine are poisonous materials breathed in when someone smokes.
2. Nicotine makes the blood vessels smaller.
3. Nicotine makes the heart beat faster.
4. Tar causes changes that keep the lungs from working correctly.
5. Tar from cigarette smoke can cause cancer.
6. When tobacco is burned, it makes smoke, a poisonous gas.
7. Some scientists believe that nicotine is addictive.

Physical Effects of Smoking

8. Smoking causes cancer of the lungs, mouth, throat, kidneys, stomach, and many other parts of the body.
9. People who smoke are much more likely to have a heart attack than people who do not smoke.
10. People who smoke are likely to die at a younger age than people who do not smoke.
11. People who smoke usually have trouble breathing and usually cough a lot.
12. People who smoke have more gum and mouth problems than people who do not smoke.
13. People who smoke are more likely to develop other illnesses, such as pneumonia, after an operation than are people who do not smoke.
14. Besides having illnesses such as cancer and heart problems, people who smoke are usually sick more often than people who do not smoke.
15. Smoking increases the risk of developing lung cancer for both men and women.

16. If a woman smokes when she is pregnant, the nicotine and carbon monoxide in her blood is passed on to her unborn child, making normal growth difficult.

17. Babies of women who smoke usually weigh less when they are born than babies whose mothers did not smoke.

Effects of Different Types of Cigarettes

18. Although some cigarettes are lower in tar and nicotine than others, all cigarettes are harmful.

19. Although some cigarettes have filters, both filter and non-filter cigarettes are harmful.

Effects of Quitting Smoking

20. If a person who smokes stops smoking for 10 years or more, that person has nearly the same chance for good health as a person who never smoked.

21. Most regular smokers may feel nervous and shaky when they first stop smoking.

22. Many people who smoke would like to quit smoking, but they are unable to stop.

Effects of Involuntary Smoking

23. Anyone who is near people who are smoking can suffer headaches, nose and throat problems, and itching, watering eyes.

24. Cigarette smoke in the air contains many harmful chemicals that affect both smokers and the people around them.

25. Children whose parents smoke are likely to have more colds and coughs than other children.

Economic and Social Consequences

26. Millions of workdays are lost each year because of illnesses caused by smoking.

27. Smoking can stain a person's teeth.

28. Smoking can leave a bad smell on a person's breath and clothing.

29. Many children smoke because their friends or parents smoke.

30. People who smoke usually do not have more friends just because they smoke.

31. Teenagers are less likely to smoke if they are good students and want to continue their schooling, understand the health problems of smoking, and have more nonsmokers than smokers among their friends.

TECHNICAL TERMS SUPPLEMENT

FACTS ABOUT SMOKING

addictive
carbon monoxide
cigarette
disease
effects
filter
kidneys
lungs
material
nicotine
operation
pneumonia
poisonous
pregnant
scientists
tobacco
vessels

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TEST SPECIFICATIONS
CONTROLLING SMOKING HABITS

GENERAL DESCRIPTION

Individuals are presented with statements describing smoking cues and nonsmoking responses designed to control smoking. Individuals indicate whether each statement is true or false.

SAMPLE ITEM

This test consists of 20 statements about controlling smoking habits. Some of the statements are true and some are false. If you think a statement is true, put a check in the column labeled TRUE. If you think a statement is false, put a check in the column labeled FALSE.

TRUE	FALSE	
____	____	1. Brisk walking is an effective way to try to avoid smoking when you are tense.

STIMULUS ATTRIBUTES

1. A test item will consist of a single-sentence statement that the individual is to judge as true or false. This statement will contain information related to either smoking cues or nonsmoking responses designed to control smoking behavior.

2. All test items will be derived from the specifications supplement Situational Control Techniques. This supplement presents statements about smoking which are based upon either empirical evidence or expert consensus. The statements are organized into sections, with each section containing information about one aspect of situational control techniques.

3. Each statement on the supplement consists of one main idea related to situational control techniques. A statement either (a) describes the general characteristics of smoking cues or nonsmoking responses or (b) presents a category of smoking cue and its associated effective nonsmoking substitute responses.

4. A test item will be based on a single statement selected from the supplement. If the supplement statement contains multiple parallel elements, only one of the elements will be used in the test item.

   Example of a supplement statement with multiple parallel elements

   Brisk walking, jogging, stretching, and taking a cool shower are effective nonsmoking behaviors for smoking cues triggered by a desire for physical stimulation.

5. A test item will present a supplement statement in either accurate or inaccurate form. An accurate test item can be created in one of the following two ways:

   a. Direct restatement: Reiterating a statement exactly as it appears on the supplement.

   b. Paraphrase: Rephrasing a supplement statement to communicate the same message in different words. This rephrasing may include substituting synonyms for words in the statement and/or reordering words within the statement.

      Example of a test item created by paraphrase

      Supplement statement: A person's smoking habit is determined by the frequency and strength of that person's smoking cues.

      Test Item: How often a person's smoking cues occur and how strong those cues are determine that individual's smoking habit.

6. An inaccurate test item will be based on a supplement statement or a paraphrase of that statement. An inaccurate item can be created in one of the following two ways:

a. Negation: Rewording a supplement statement to have the opposite meaning. If the statement is worded positively, negation is accomplished by adding a negative word or phrase to the statement. If the statement is worded negatively, negation is accomplished by taking out a negative word or phrase.

Example of a test item created by negation

Supplement statement: A person can use the same nonsmoking behaviors to manage urges set off by several different smoking cues.

Test Item: An individual cannot use the same nonsmoking behaviors to manage urges set off by several different smoking cues.

b. Substitution: Using a nonsmoking response appropriate to a cue category other than the one described, resulting in a statement presenting a nonsmoking response that does not match the smoking cue.

Example of a test item created by substitution

Supplement statement: Chewing sugarless gum is an effective nonsmoking behavior for smoking cues triggered by a desire for oral gratification.

Test item: Polishing one's glasses is an effective nonsmoking behavior for smoking cues triggered by a desire for oral gratification.

7. A test item will contain a maximum of 25 words. These words will be no higher than an eighth grade reading level on the IOX Basic Skills Word List. Technical terms not found on the word list may be used only if they are listed on the Technical Terms Supplement.

8. A test will contain an approximately equivalent number of accurate and inaccurate test items. These items will be selected according to the following procedures:

   a. One item will be randomly selected from each section of the supplement.

   b. The rest of the items will be randomly selected from the supplement as a whole.

   c. All of the items will be reviewed by content experts and modified as needed based upon this review.

9. All of the procedures for creating accurate and inaccurate test items will be used as equally as possible, with the exception of negation of a positively-stated supplement statement. This type of change will be used only when no other transformation is possible, as it results in a test item which requires the respondent to recognize that a negatively-stated idea is not accurate, in effect creating a double negative.

RESPONSE ATTRIBUTES

1. Two response columns will be provided. One column will be labeled "TRUE" and the other will be labeled "FALSE."

2. The correct answer to a question will be "TRUE" if the statement is accurate, or "FALSE" if the statement is inaccurate.

SPECIFICATIONS SUPPLEMENT
SITUATIONAL CONTROL TECHNIQUES

Characteristics of Smoking Cues

1. Smoking cues are those factors which trigger a person's urge to smoke.
2. Smoking cues exist either within a person or as part of the environment.
3. Different people may have different smoking cues.
4. Common physical factors that act as smoking cues include physical stimulation, oral gratification, and handling objects.
5. Common emotional factors that act as smoking cues include pleasure and relaxation and a desire to reduce negative feelings.
6. Common environmental factors that act as smoking cues include specific times, places, and situations that are part of a person's daily routine.
7. A person's smoking habit consists of that person's response to various smoking cues.
8. A person's smoking habit is a behavior that is so well-established it occurs without a person's thinking about it.
9. A person's smoking habit is determined by the frequency and strength of that person's smoking cues.
10. Understanding your personal smoking pattern means being aware of those situations, times, places, and desires that trigger your urge to smoke.
11. The number of smoking cues that trigger a person's urge to smoke may often increase during an effort to stop smoking.

Characteristics of Effective Nonsmoking Behaviors

12. Nonsmoking behaviors are particular actions designed to change smoking cues.

13. Nonsmoking behaviors need to be practiced in order to be used effectively.

14. To be effective, a nonsmoking behavior used in response to a smoking cue should satisfy a person's urge to smoke.

15. Ideally, effective nonsmoking behaviors should have no negative health effects.

16. A nonsmoking behavior should be an action that is usually not associated with smoking (e.g., drinking milk, swimming).

17. A person can use the same nonsmoking behaviors to manage urges set off by several different smoking cues.

18. No one particular nonsmoking behavior will work effectively for all smokers.

19. Rewards are effective in reinforcing the use of nonsmoking behaviors.

Specific Nonsmoking Responses

20. Brisk walking, jogging, stretching, and taking a cool shower are effective nonsmoking behaviors for smoking cues triggered by a desire for physical stimulation.

21. Eating low calorie foods (e.g., vegetables, sugarless candy), chewing sugarless gum, and drinking beverages considered to be incompatible with smoking (e.g., milk, fruit juice, water) are effective nonsmoking behaviors for smoking cues triggered by a desire for oral gratification.

22. Drawing, working on crossword puzzles, polishing one's glasses, toying with a pencil, and working on hobbies that require the use of both hands and concentration (e.g., knitting, crocheting, model building) are effective nonsmoking behaviors for smoking cues triggered by a desire to handle objects.

23. Deep breathing exercises, meditation, taking a warm bath or shower, eating low calorie foods, drinking beverages not usually associated with smoking, physical exercise, and social activities are effective nonsmoking behaviors for smoking cues triggered by a desire for relaxation and pleasure.

24. Deep breathing exercises, meditation, physical activity, stretching, reading, playing cards, and doing crossword puzzles are effective nonsmoking behaviors for smoking cues triggered by a desire to reduce feelings such as tension, anger, and boredom.

25. Altering routine activities (e.g., avoiding smoking sections in restaurants, theaters and planes; staying away from bars, social situations, and leisure activities associated with smoking), keeping track of nonsmoking behaviors to earn a reward, reviewing your reasons for not smoking, thinking about smoking-related diseases, telling yourself not to smoke, asking friends, family and co-workers to reinforce nonsmoking behaviors, drinking non-alcoholic beverages, and thinking of yourself as a nonsmoker are effective nonsmoking behaviors for smoking cues triggered by the everyday environment.

TECHNICAL TERMS SUPPLEMENT
CONTROLLING SMOKING HABITS

meditation
oral gratification
physical stimulation
technique

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CONTROLLING SMOKING HABITS

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TEST SPECIFICATIONS

BREAKING SMOKING HABITS

GENERAL DESCRIPTION

Individuals are presented with brief descriptions of fictitious persons experiencing commonly-occuring smoking cues, then asked to select from among possible courses of action the most healthy and effective way to handle each particular cue. The correct course of action will respond to the smoking cue in a situation with an appropriate nonsmoking response.

SAMPLE ITEM

This test presents descriptions of people who want to break their smoking habits. Each person is trying to use situational control techniques to deal with specific smoking cues. Read each description. Then circle the letter of the best action for the individual to take.

1. Dwayne often smokes because of the pleasure that he gets from handling and holding a cigarette. The most healthy and effective way to handle this particular smoking cue would be to:

   (A) Plan each day's activities the evening before. (action that has no direct impact on the smoking cue)

   (B) Spend more time in the company of nonsmokers. (action that has no direct impact on the smoking cue)

   (C) Take up an activity such as drawing that keeps his hands busy. (correct action)

   (D) Switch to a different brand of cigarettes for a week or two. (action that is unhealthy)

STIMULUS ATTRIBUTES

1. A test item will begin with a single-sentence description of a particular smoking habit that an individual has developed, followed by the directive, "The most healthy and effective way to handle this particular smoking cue would be to:"

2. The smoking habit described in a test item will be triggered by one of the types of smoking cues eligible for testing. Sufficient information will be provided to make clear the particular type of cue that is present.

3. The types of smoking cues eligible for testing are as follows:

    a. Stimulation--an individual smokes to wake up; to keep going; to maintain a high energy level.

    b. Pleasure and relaxation--an individual smokes to relax; to obtain general pleasure.

    c. Reduction of negative feelings--an individual smokes to reduce tension; to reduce feelings of anger, distress, pressure or boredom; to be able to cope with problems.

    d. Manipulation and handling--an individual smokes for the enjoyment of handling a cigarette and/or watching the smoke rise.

    e. Oral gratification--an individual smokes for the good taste that it yields.

    f. Habit--an individual smokes in response to a specific stimulus that has, as a result, become associated with smoking in an almost automatic manner. Typical stimuli which set the occasion for smoking include drinking coffee, tea, or alcoholic beverages; driving; reading; watching television; finishing a meal; taking a work break; studying; talking on the telephone; waking up; going to sleep; etc.

4. The stimulus portion of a test item will be no longer than 35 words in length and will contain no words above an eighth grade level on the IOX Basic Skills Word List.

5. On a given form of the test, the various types of smoking cues will be represented approximately equally.

RESPONSE ATTRIBUTES

1. Four answer choices will follow each test item. Each choice will describe a plausible action that an individual might take in order to handle the smoking cue described.

2. The correct answer choice will describe an action selected from the appropriate nonsmoking responses listed for the type of smoking cue presented in the item. The appropriate responses for each type of smoking cue are as follows:

Smoking Cue	Appropriate Nonsmoking Responses
Stimulation	Undertaking some form of physical activity, for example, deep breathing, brisk walking, stretching, or jogging.
Pleasure and relaxation	Eating, drinking non-alcoholic or alcoholic beverages in moderation, participating in pleasurable individual or social activities, taking a bath or shower.
Reduction of negative feelings	Utilizing some form of systematic relaxation procedure, for example, deep breathing or meditation.
Manipulation and handling	Occupying the hands in some way, for example, toying with an object such as a pen or pencil, drawing, knitting, or crocheting, working on a craft project, taking eyeglasses on and off and polishing them.
Oral gratification	Chewing gum, eating sugarless candy, eating something low in calories such as celery or carrot sticks.

Habit	Replacing the specific stimulus that is cueing smoking with an alternative (for example, substituting tea for coffee), initiating an activity that is incompatible with smoking (for example, sewing while watching television), or reviewing diseases associated with smoking.

3. The incorrect answer choices for an item will each describe one of the following inappropriate responses to a smoking cue:

    a. A response that is unhealthy--acting in a way that either (1) violates basic principles of good health (for example, not eating three meals a day, not exercising, not maintaining regular sleeping patterns); (2) involves the consumption of foods that are high in sugar, salt, fat, and/or caloric content; (3) involves the consumption of large quantities of alcoholic beverages; (4) involves the use of medications or drugs; or (5) allows smoking to continue (for example, changing the type of cigarette smoked, making cigarettes less accessible by purchasing a pack instead of a carton, smoking with the other hand, putting cigarettes in a hard-to-open container or an inconvenient location.)

    b. A response that will most likely have no direct impact on the smoking cue--acting in a way that either (1) modifies the environment or one's behavior in a way unrelated to the smoking cue that is present, or (2) results in an action that is an appropriate nonsmoking response for a type of smoking cue other than the one present in the particular situation given.

4. Answer choices will be no longer than 18 words in length and will contain no words above an eighth grade level on the IOX Basic Skills Word List.

TEST SPECIFICATIONS

SMOKING AND ASSERTIVENESS

GENERAL DESCRIPTION

Individuals are presented with descriptions of fictitious persons experiencing discomfort due to the presence of others who are smoking or offering smoking materials. Individuals are asked to select from among possible options a course of action that incorporates assertiveness techniques or to indicate that none of the suggested options is appropriate.

SAMPLE ITEM

> **This test presents descriptions of people who feel uncomfortable because others are smoking or asking them to smoke. Each person wants to deal with the problem by using assertiveness techniques.**
>
> **Read each item. Then circle the letter of the action which describes an assertive response to the situation described. If there is no asser[illegible] response presented, circle choic[illegible] "None of the above."**

1. Tom is in a movie theatre enjoying a film. The man sitting next to Tom is smoking, and the smoke keeps drifting into Tom's face. To act assertively, Tom should:

   (A) Ask the man if he would mind blowing his smoke in another direction. (non-confrontational)

   (B) Ask the man if he would put out his cigarette. (assertive)

   (C) Ignore the man and hope that he does not light up another cigarette. (passive)

   (D) None of the above.

STIMULUS ATTRIBUTES

1. A test item will begin with a description of a situation in which an individual who is not smoking experiences discomfort due to the presence of others who are either smoking or encouraging smoking behavior. The description will be followed by the directive: "To act assertively, (name of person) should:"

2. The types of situations eligible for testing are as follows:

   a. Exposure to smoking or smoking materials -- an individual is exposed to the smoking of others or to smoking materials. This individual may be a person who has never smoked or a person who is trying to quit smoking.

   b. Peer pressure to smoke -- an individual is encouraged to smoke by friends or colleagues.

3. The stimulus portion of a test item will be no longer than 60 words in length and will contain no words above an eighth grade on the IOX Basic Skills Word List.

4. On a given form of the test, the two types of smoking situations will be represented approximately equally.

RESPONSE ATTRIBUTES

1. Four answer choices will follow each test item. The first three answer choices will describe plausible actions that an individual might take to deal with the situation described. The fourth answer choice will be "None of the above." This choice will be used to indicate that none of the first three answer choices incorporates an assertive response to the problem situation.

2. The correct answer choice will either exemplify an assertive response to the situation presented or, if all of the specific choices given describe non-assertive responses, state "None of the above."

3. An answer choice that exemplifies an assertive response will present an individual either politely asking a smoker to stop smoking, refusing an offer of smoking materials, or suggesting an alternative behavior for the smoker whereby the nonsmoker will not be exposed to smoke or smoking materials.

4. Incorrect answer choices will be plausible actions that are not assertive in the described situation. "None of the above" will also be an incorrect answer choice if an assertive response is provided as one of the other response options.

5. Incorrect answer choices will describe responses to the problem situation that do not incorporate assertiveness techniques. These responses include passive, aggressive, acquiescent, and non-confrontational responses. Each of these responses will differ from an assertive response in the following ways:

   a. A passive response will describe an individual who silently endures the discomfort of the smoking situation.

   b. An aggressive response will describe an individual who either makes a personal attack on the smoker (e.g., calls the smoker childish), bullies the smoker (e.g., threatens to hurt the smoker), takes an action that violates the smoker's rights (e.g., takes cigarettes from the smoker), or suggests alternative behaviors that will violate the smoker's rights (e.g., asks a person not to smoke in the smoking section of a restaurant.)

   c. An acquiescent response will describe an individual who either accepts smoking materials in order to give the impression of smoking (e.g., lights a cigarette but leaves it in the ash tray), or actually engages in smoking behavior.

   d. A non-confrontational response will describe an individual who either only indirectly communicates personal discomfort with a smoking situation (e.g., makes a general announcement about how much smoke there is in the room), changes his or her own behavior in order to breathe air that is free from smoke, avoids responding to encouragement to smoke by changing the subject, or requests a change in someone else's smoking behavior that only partially alleviates the smoking situation (e.g., asks the smoker to smoke fewer cigarettes).

6. The response option, "None of the above," will be the correct response for approximately one-fourth of the test items.

7. Answer choices will be no longer than 20 words in length and will contain no words above an eighth grade level on the IOX Basic Skills Word List.

TEST SPECIFICATIONS

DECISION-MAKING

GENERAL DESCRIPTION

Individuals are presented with fictional descriptions of people who are attempting to make decisions in a health-related context. Individuals are asked to select from among four options the next step to be followed using a systematic approach to decision-making.

SAMPLE ITEM

This test presents descriptions of people who are trying to make decisions that may affect their health or the health of others.

Read each item. Circle the letter of the next step that the person should take in order to be making decisions using a systematic approach.

1. George has a drinking problem. His boss has told George that he will be fired if he can't control his drinking. Because George has been unable to deal with his alcohol problem by himself, he recognizes that he needs professional help. He realizes, therefore, that he needs to choose the particular type of help that will be best for him.

   He discusses the problem with his wife. Together they identify three possible approaches: (1) a self-help clinic operated by reformed alcoholics, (2) a private physician who treats alcoholism with drugs, and (3) a one-week alcoholism program operated by a private company.

   What is the best thing for George to do next in order to use the systematic decision-making approach?

   A. Select one of the three approaches. (skipped step)

B. Identify the decision he needs to make. (repeated step)

C. Talk to his doctor to get information about each approach. (correct)

D. Ask his boss which approach seems best. (ineffective implementation of correct step)

STIMULUS ATTRIBUTES

1. A test item will begin with a description of an individual who is attempting to reach a decision in a health-related context. The description will be followed by the question, "What is the best thing for (name of individual) to do next in order to use the systematic decision-making approach?"

2. The context will be related to one of the following health areas: alcohol and substance abuse, diabetes, exercise, immunization, nutrition, smoking, or stress.

3. The described situations will not require immediate decisions. The individual will have adequate time to use the five steps of the systematic decision-making process described in the specifications supplement.

4. The individual will either (a) have completed one or more steps of the systematic decision-making model, or (b) be confronted with a situation in which the systematic decision-making model should be used.

5. If the individual has already completed any steps in the systematic decision-making model, these steps will have been completed in the proper sequence and with no clear violations of the criteria for effective implementation described in the specifications supplement.

6. The descriptions will be no more than 200 words in length and will contain no words above an eighth grade level on the *IOX Basic Skills Word List*, with the exception of the following words: diabetes, immunize, marijuana, stress, systematic. Sentences will not exceed 20 words in length.

RESPONSE ATTRIBUTES

1. Four answer choices will follow each test question. Each choice will describe a plausible action that the described decision-maker might possibly take.

2. The correct answer will be a description of an action that:

   a. clearly represents the appropriate next step for the decision-maker in following the systematic decision-making model described in the specifications supplement.

   b. is consistent with the effectiveness criteria associated with the correct step as described in the specifications supplement.

3. An incorrect answer choice will be an action that is plausible but inappropriate at the point in the decision-making sequence described in the item. Incorrect answer choices will be one of the following violations of the systematic decision-making process described in the specifications supplement.

   a. Skipped Step: An action representing one of the decision-making steps that occurs after the correct step. This action should not violate the effectiveness criteria for that step.

   b. Repeated Step: An action representing one of the decision-making steps that has already occurred. This action should not violate the effectiveness criteria for that step.

   c. Ineffective Implementation of Correct Step: An action representing the correct step in the decision-making sequence, but in violation of one or more of that step's effectiveness criteria.

   d. Ineffective Implementation of Incorrect Step: An action representing an incorrect step in the decision-making sequence that is also in violation of one or more of the step's effectiveness criteria.

   e. Deflective Action: An action that is unrelated to effective decision-making and may deflect the decision-maker from taking an action necessary for systematic decision-making.

4. Answer choices will be no longer than 20 words in length and will contain no words above an eighth grade level on the IOX Basic Skill Word List with the exception of the following words: marijuana, stress.

SPECIFICATIONS SUPPLEMENT

DECISION-MAKING

A SYSTEMATIC DECISION-MAKING MODEL

Although the decision-making process has been conceptualized in many ways, the following steps reflect a systematic approach to decision-making. Criteria that are required to effectively implement the specified step are provided for each step of the decision-making process. No step should be taken before adequately completing all preceding steps. Earlier steps should be repeated only in light of additional information that makes it clear that recycling is warranted.

Step 1: Identifies/clarifies the decision to be made.

The decision-maker, recognizing that a decision must be reached, isolates the decision to be made.

Effectiveness Criteria:

(1) The decision to be made should be clearly related to the situation.

(2) The decision to be made should be at an appropriate level of specificity (neither too general nor too specific) so that making the decision should impact on the precipitating situation.

Step 2: Identifies possible decision options.

The decision-maker isolates a range of potential courses of action, that is, decision options. One of these decision options may be to do nothing.

Effectiveness Criteria:

(1) More than one potential course of action must be identified.

(2) The identified options must be relevant to the decision at issue.

Step 3: Gathers/processes information.

The systematic decision-maker gathers information about (a) each decision option and (b) the decision-maker's values (including preferences) that may be relevant to the decision.

Effectiveness Criteria:

(1) Information should be sought regarding the advantages and disadvantages of each decision option.

(2) The information should be obtained only from sources that are likely to have access to accurate information.

(3) Values should be considered during this step.

Step 4: Makes/implements the decision.

The systematic decision-maker makes a decision on the basis of the information gathered about decision options and values, then implements that decision.

Effectiveness Criteria:

(1) The decision should be consistent with the information about the options.

(2) Decision-makers should make the decisions for themselves and should not expect or request that other individuals make the decisions.

Step 5: Evaluates the decision.

The systematic decision-maker judges the effect(s) of the implemented decision.

Effectiveness Criteria:

(1) The decision-maker considers whether the implementation of the decision has the desired impact on the situation.

(2) The decision-maker considers the effectiveness of decision effects in relationship to the decision-maker's values.

(3) The decision-maker should not persist in behavior that has not had the desired impact or that is inconsistent with the decision-maker's values.

(4) The decision-maker resumes, or is prepared to resume, the decision-making process if the decision has not had the desired impact or if the decision's effect is inconsistent with the decision-maker's values. The decision-maker should not implement a new decision without repeating the systematic decision-making process.

TEST SPECIFICATIONS
SYSTEMATIC DECISION-MAKING

GENERAL DESCRIPTION

Individuals are presented with fictional descriptions of people who are making decisions in a health-related context. Individuals are asked to indicate whether the decision-makers correctly use the systematic decision-making process. If individuals indicate that the decision-making process is carried out incorrectly, they are then asked to describe the nature of the error.

SAMPLE ITEM

This test presents descriptions of people who are making decisions that may affect their health or the health of others. Each person has either completed the entire decision-making process correctly or has made one mistake in this process.

Read each item. Circle Yes or No to indicate whether the person correctly completed each step in the decision-making process. If you circle No, briefly describe what the person did wrong.

1. George has a drinking problem. His boss has told George that he will be fired if he can't control his drinking. Because George has been unable to deal with his alcohol problem by himself, he recognizes that he needs professional help. He realizes, therefore, that he needs to choose the particular type of help that will be best for him.

   He discusses the problem with his wife. Together they identify three possible approaches: (1) a self-help clinic operated by reformed alcoholics, (2) a private physician who treats alcoholism with drugs, and (3) a one-week alcoholism program operated by a private company. George decides to try the week-long alcoholism program and enrolls in it the following week.

   Several weeks later, George thinks again about his decision to enroll in the alcoholism program. He's pleased with his choice because he feels he is effectively handling his drinking problem.

A. Did George correctly complete each of the steps in the decision-making process?

Circle One: Yes No

B. If No, what did George do wrong?

STIMULUS ATTRIBUTES

1. A test item will begin with a description of an individual who is making a decision in a health-related context. The description will be followed by two questions:

"A. Did (name of individual) correctly complete each of the steps in the decision-making process?

Circle One: Yes No

B. If No, what did (name of individual) do wrong?"

2. The context will be related to one of the following health areas: alcohol and substance abuse, diabetes, exercise, immunization, nutrition, smoking, or stress.

3. The individual will either (a) have correctly completed all of the steps in the systematic decision-making process, or (b) have made one error in the decision-making process described in the specifications supplement.

4. If the individual has made one error in the systematic decision-making process, the error will be either (a) skipping one step, or (b) completing a step incorrectly by violating one of the step's effectiveness criteria as described in the specifications supplement.

5. The descriptions will be no more than 200 words in length and will contain no words above an eighth grade level on the IOX Basic Skills Word List, with the exception of the following words: diabetes, immunize, marijuana, stress. Sentences will not exceed 20 words in length.

RESPONSE ATTRIBUTES

1. Two response opportunities will be available, a Yes/No response and a constructed response. Respondents will

use the Yes/No option to identify whether the individual described in the test item correctly completed each step in the systematic decision-making process. If respondents answer No, they are then to describe what the individual did incorrectly.

2. A correct answer will be either (a) a Yes response, if the individual described in the test item correctly completed all of the steps in the decision-making process, or (b) a No response and an accurate description of the error made in the decision-making process, if the individual did not correctly complete all of the steps in the systematic decision-making process.

3. An accurate description will either (a) indicate which step is omitted in the decision-making process if one of the decision-making steps is skipped in the test item, or (b) indicate which step is done incorrectly if one of the decision-making steps is completed in a way that violates that step's effectiveness criteria as described in the specifications supplement.

   For both types of errors, the respondent may indicate either what the individual described in the test item did wrong or what the individual should have done to correctly use the decision-making process.

4. Steps in the decision-making process can be identified as either:

   a. general descriptions or labels of the step (e.g., gathers/processes informations), or

   b. specific actions that exemplify the step (e.g., talks to his doctor to get information about each approach)

5. An incorrect answer will be:

   a. a No response with or without a constructed response when a Yes response is appropriate, that is, when the individual described in the test item has correctly completed all steps in the systematic decision-making process.

   b. a Yes response when a No response is appropriate, that is, when the individual described in the test item does not correctly complete all steps in the decision-making process.

   c. a No response without an accurate constructed response, according to the criteria described in Response Attribute 3.

SCORING AND INTERPRETATION

1. The rationale underlying this measure is that individuals who understand the systematic decision-making process for health-related decisions can identify whether or not described individuals have correctly completed the systematic decision-making process in health-related contexts. Individuals can also describe the nature of the error when one of the decision-making steps has been omitted or completed incorrectly.

2. Point values are assigned as follows:

1 point -	Correct responses as described in Response Attributes 2 and 3
0 points -	Incorrect responses as described in Response Attribute 5

3. High scores indicate better ability to use systematic decision-making in health-related contexts.

SPECIFICATIONS SUPPLEMENT

SYSTEMATIC DECISION-MAKING

A SYSTEMATIC DECISION-MAKING MODEL

Although the decision-making process has been conceptualized in many ways, the following steps reflect a systematic approach to decision-making. Criteria that are required to effectively implement the specified step are provided for each step of the decision-making process. No step should be taken before adequately completing all preceding steps. Earlier steps should be repeated only in light of additional information that makes it clear that recycling is warranted.

Step 1: Identifies/clarifies the decision to be made.

The decision-maker, recognizing that a decision must be reached, isolates the decision to be made.

Effectiveness Criteria:

(1) The decision to be made should be clearly related to the situation.

(2) The decision to be made should be at an appropriate level of specificity (neither too general nor too specific) so that making the decision should impact on the precipitating situation.

Step 2: Identifies possible decision options.

The decision-maker isolates a range of potential courses of action, that is, decision options. One of these decision options may be to do nothing.

Effectiveness Criteria:

(1) More than one potential course of action must be identified.

(2) The identified options must be relevant to the decision at issue.

Step 3: Gathers/processes information.

The systematic decision-maker gathers information about (a) each decision option and (b) the decision-maker's values (including preferences) which may be relevant to the decision.

Effectiveness Criteria:

(1) Information should be sought regarding the advantages and disadvantages of each decision option.

(2) The information should be obtained only from sources that are likely to have access to accurate information.

(3) Values should be considered during this step.

Step 4: Makes/implements the decision.

The systematic decision-maker makes a decision on the basis of the information gathered about decision options and values, then implements that decision.

Effectiveness Criteria:

(1) The decision should be consistent with the information about the options.

(2) Decision-makers should make the decisions for themselves and should not expect or request that other individuals make the decisions.

Step 5: Evaluates the decision.

The systematic decision-maker judges the effect(s) of the implemented decision.

Effectiveness Criteria:

(1) The decision-maker considers whether the implementation of the decision has the desired impact on the situation.

(2) The decision-maker considers the effectiveness of decision effects in relationship to the decision-maker's values.

(3) The decision-maker should not persist in behavior that has not had the desired impact or that is inconsistent with the decision-maker's values.

(4) The decision-maker resumes, or is prepared to resume, the decision-making process if the decision has not had the desired impact or if the decision's effect is inconsistent with decision-maker's values. The decision-maker should not implement a new decision without repeating the systematic decision-making process.

TEST SPECIFICATIONS
MAKING DECISIONS

GENERAL DESCRIPTION

Children are presented with fictional descriptions of young people who are attempting to make decisions in a health-related context. Children are asked to select from among three options the next step to be followed using a systematic approach to decision-making.

SAMPLE ITEM

This test is about young people who are trying to make decisions.

Read each story. Circle the letter of the next thing that the person should do in order to be making a decision in the best way.

1. Carrie is going to her cousin Rick's house on Friday. Rick has told Carrie that his parents will be out and that they can drink some of his parents' wine. He says that they won't get caught because his parents will be out until very late. Carrie knows that she must decide what she will do when she is with Rick. Carrie talks to her friend and they think about what Carrie can do. Carrie can either (1) tell Rick she doesn't want to drink with him, or (2) drink wine with Rick on Friday.

   What should Carrie do next in order to be making a decision in the best way?

   A. Drink just a little wine with Rick. (skipped step)

   B. Read about drinking in her health book. (correct)

   C. Tell Rick that she can't go to his house on Friday. (deflective action)

STIMULUS ATTRIBUTES

1. A test item will begin with a description of an individual who is attempting to reach a decision in a health-related context. The description will be followed by the question, "What should (name of individual) do next in order to be making a decision in the best way?"

2. The context will be related to one of the following health areas: alcohol and substance abuse, diabetes, exercise, nutrition, smoking, or stress.

3. The described situations will not require immediate decisions. The individual will have adequate time to use the five steps of the systematic decision-making process described in the specifications supplement.

4. The individual will either (a) have completed one or more steps of the systematic decision-making model, or (b) be confronted with a situation in which the systematic decision-making model should be used.

5. If the individual has already completed any steps in the systematic decision-making model, these steps will have been completed in the proper sequence and with no clear violations of each step as described in the specifications supplement.

6. The descriptions will be no more than 200 words in length and will contain no words above a fourth grade level on the IOX Basic Skills Word List, with the exception of the following words: cigarette, decision, diabetes, diet, marijuana, physical education. Sentences will not exceed 20 words in length.

RESPONSE ATTRIBUTES

1. Three answer choices will follow each test question. Each choice will describe a plausible action that the described decision-maker might possibly take.

2. The correct answer will be a description of an action that clearly represents the appropriate next step for the decision-maker in following the systematic decision-making model described in the specifications supplement.

3. An incorrect answer choice will be an action that is plausible but inappropriate at the point in the decision-making sequence described in the item. Incorrect answer choices will be one of the following violations of the systematic decision-making process described in the specifications supplement.

   a. Skipped Step: An action representing one of the decision-making steps that occurs after the correct step. This action should not violate that step as described in the specifications supplement.

   b. Repeated Step: An action representing one of the decision-making steps that has already occurred. This action should not violate that step as described in the specifications supplement.

   c. Ineffective Implementation of a Step: An action representing a step in the decision-making sequence that is in clear violation of that step as described in the specifications supplement.

   d. Deflective Action: An action that is unrelated to effective decision-making and may deflect the decision maker from taking an action necessary for systematic decision-making.

4. Answer choices will be no longer than 20 words in length and will contain no words above a fourth grade level on the IOX Basic Skill Word List, with the exception of the following words: cigarette, decision, diet, marijuana.

SPECIFICATIONS SUPPLEMENT
MAKING DECISIONS

A SYSTEMATIC DECISION-MAKING MODEL

Although the decision-making process has been conceptualized in many ways, the following steps reflect a systematic approach to decision-making. No step should be taken before adequately completing all preceding steps. Earlier steps should be repeated _only_ in light of additional information that makes it clear that recycling is warranted.

Step 1: _Identifies the decision to be made_.

The decision-maker understands that a decision must be reached and identifies the decision to be made. The decision to be made should be clearly related to the situation presented.

Step 2: _Identifies possible decision options_.

The decision-maker identifies at least two possible courses of action, that is, decision options. One of these decision options may be to do nothing. All decision options must be related to the decision being made.

Step 3: _Gathers/thinks about information_.

The decision-maker gathers information about the advantages and disadvantages of each decision option. The information should be obtained only from sources that are likely to have access to accurate information. The decision-maker thinks about the decision options in light of values and preferences that may be related to the decision.

Step 4: _Makes/carries out the decision_.

The decision-maker either (1) makes a decision, or (2) has a knowledgeable, responsible, unbiased person (e.g., parent, teacher) make the decision, when appropriate. The decision should be consistent with the information gathered about decision options and values. The decision-maker then carries out that decision.

Step 5: _Evaluates the decision_.

The decision-maker judges the decision by considering whether it has the desired impact on the situation and if its effects are consistent with the decision-maker's values. The decision-maker repeats, or is prepared to repeat, the systematic decision-making process if necessary.

TEST SPECIFICATIONS

MAKE A DECISION

GENERAL DESCRIPTION

Children are presented with fictional descriptions of young people who are attempting to make decisions in a health-related context. Children are then asked to write a description of the next step to be followed using a systematic approach to decision-making.

SAMPLE ITEM

This test is about young people who are trying to make decisions.

Read each story. Then write what the person should do next in order to be making a decision in the best way.

1. Carrie is going to her cousin Rick's house on Friday. Rick has told Carrie that his parents will be out and that they can drink some of his parents' wine. He says that they won't get caught because his parents will be out until very late. Carrie knows that she must decide what she will do when she is with Rick. Carrie talks to her friend and they think about what Carrie can do. Carrie can either (1) tell Rick she doesn't want to drink with him, or (2) drink wine with Rick on Friday.

   What should Carrie do next in order to be making a decision in the best way?

STIMULUS ATTRIBUTES

1. A test item will begin with a description of an individual who is attempting to reach a decision in a health-related context. The description will be followed by the question, "What should (name of individual) do next in order to be making a decision in the best way?

2. The context will be related to one of the following health areas: alcohol and substance abuse, diabetes, exercise, nutrition, smoking, or stress.

3. The described situations will not require immediate decisions. The individual will have adequate time to use the five steps of the systematic decision-making process described in the specifications supplement.

4. The individual will either (a) have completed one or more steps of the systematic decision-making model, or (b) be confronted with a situation in which the decision-making model should be used.

5. If the individual has already completed any steps in the systematic decision-making model, these steps will have been completed in the proper sequence and with no clear violations of each step as described in the specifications supplement.

6. The descriptions will be no more than 200 words in length and will contain no words above a fourth grade level on the IOX Basic Skills Word List, with the exception of the following words: cigarette, decision, diabetes, diet, marijuana, physical education. Sentences will not exceed 20 words in length.

RESPONSE ATTRIBUTES

1. An answer will be an open-ended description of an action that the decision-maker could take using the systematic decision-making model.

2. A correct answer will be a description that correctly identifies the appropriate next step in the decision-making model as described in the specification supplement. If the last step in the decision-making process

described in the stimulus is either Step 2 (Identifies possible decision options) or Step 3 (Gathers/thinks about information), a correct answer may also be a continuation of that step (e.g., the decision-maker identifies additional possible options.) Repetition of earlier steps will be correct only if the respondent provides a rationale that is consistent with systematic decision-making.

3. Steps in the decision-making process can be identified as either:

   (1) general descriptions or labels of the step (e.g., gathers/thinks about information), or

   (2) specific actions that exemplify the step (e.g., ask a doctor for information about the effects of alcohol.)

4. An incorrect answer will be any action that is inappropriate at the point in the decision-making sequence described in the item. Incorrect answer choices may come from one of the following violations of the systematic decision-making process described in the specifications supplement.

   a. Skipped Step: An action representing one of the decision-making steps that occurs after the correct step.

   b. Repeated Step: An action representing one of the decision-making steps that has already occurred, where no acceptable rationale for the action is provided.

   c. Ineffective Implementation of a Step: An action representing a step in the decision-making sequence that is in clear violation of that step as described in the specifications supplement.

   d. Deflective Action: Any action that is unrelated to effective decision-making and may deflect the decision-maker from taking an action necessary for systematic decision-making.

SCORING AND INTERPRETATION

1. The rationale underlying this measure is that children who understand the systematic decision-making process will be able to provide a description of the appropriate next step for individuals to take in order to make systematic decisions in health-related contexts.

2. Point values are assigned to answers as follows:

1 point -	Correct responses as described in Response Attribute 2.
0 points -	Incorrect responses including, but not limited to, those described in Response Attribute 4.

3. High scores indicate better ability to use systematic decision-making in health-related contexts.

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SPECIFICATIONS SUPPLEMENT

MAKE A DECISION

A SYSTEMATIC DECISION-MAKING MODEL

Although the decision-making process has been conceptualized in many ways, the following steps reflect a systematic approach to decision-making. No step should be taken before adequately completing all preceding steps. Earlier steps should be repeated only in light of additional information that makes it clear that recycling is warranted.

Step 1: Identifies the decision to be made.

The decision-maker understands that a decision must be reached and identifies the decision to be made. The decision to be made should be clearly related to the situation presented.

Step 2: Identifies possible decision options.

The decision-maker identifies at least two possible courses of action, that is, decision options. One of these decision options may be to do nothing. All decision options must be related to the decision being made.

Step 3: Gathers/thinks about information.

The decision-maker gathers information about the advantages and disadvantages of each decision option. The information should be obtained only from sources that are likely to have access to accurate information. The decision-maker thinks about the decision options in light of values and preferences that may be related to the decision.

Step 4: Makes/carries out the decision.

The decision-maker either (1) makes a decision, or (2) has a knowledgeable, responsible, unbiased person (e.g., parent, teacher) make the decision when appropriate. The decision should be consistent with the information gathered about decision options and values. The decision-maker then carries out that decision.

Step 5: Evaluates the decision.

The decision-maker judges the decision by considering whether it has the desired impact on the situation and if its effects are consistent with the decision-maker's values. The decision-maker repeats, or is prepared to repeat, the systematic decision-making process, if necessary.

TEST SPECIFICATIONS

COMMUNICATING ABOUT SMOKING

GENERAL DESCRIPTION

Individuals are presented with descriptions of fictitious persons who want either to express their feelings about their efforts to stop smoking or to request assistance with their stop smoking efforts. Individuals are asked to select from among three statements the one that most clearly and directly communicates the fictitious person's message, or to indicate that none of the suggested statements is appropriate.

SAMPLE ITEM

This test presents descriptions of people who are trying to stop smoking. They each have a message about smoking that they want to communicate to another individual.

Read each item. Then circle the letter of the choice that expresses the person's message clearly and directly. If there is no clear and direct response presented, circle choice D, "None of the above."

1. Jane wants to tell her husband how hard it is for her not to smoke when she is under pressure at work. The most clear and direct way for Jane to say this is:

   A. "You know what I mean about work pressure and smoking." (crystal ball message)

   B. "When I'm under so much pressure at work, I'm afraid I'll break down and have a cigarette." (correct)

   C. "People should try to stop smoking only when they aren't under pressure at work." (overgeneralized message)

   D. None of the above.

STIMULUS ATTRIBUTES

1. Test items will begin with brief descriptions of fictitious individuals who either wish to communicate their feelings about their efforts to stop smoking or wish to request assistance with their stop smoking efforts. Each description will be followed by the directive: "The most clear and direct way for (name of individual) to say this is:"

2. The situation described in a test item will include the following elements:

   a. a description of the problem or situational context

   b. a description of the contents of the intended message

   c. a phrase indicating to whom the message is being communicated (optional)

3. The types of messages eligible for testing are as follows:

   a. Feelings regarding efforts to stop smoking - individuals communicate their feelings regarding the success or failure of their efforts to stop smoking. These feelings may cover a range of emotions from despair to elation.

   b. Requests for assistance with stop smoking efforts - individuals who are trying to stop smoking ask others for help with their stop smoking efforts. Requests for assistance may include asking for help in keeping track of the number of cigarettes smoked, asking others not to "lend" cigarettes to the individual, or asking others not to smoke while in their presence.

4. The stimulus portion of a test item will be no longer than 50 words and will contain no words above an eighth grade level as listed on the IOX Basic Skills Word List.

RESPONSE ATTRIBUTES

1. Four answer choices will follow each test question. The first three answer choices will be quotations which are plausible statements of the message to be communicated. The fourth answer choice will be "None of the above." This choice will be used to indicate that none of these quotations clearly and directly communicates the individual's message.

2. The correct answer choice will either be a clear and direct statement of the individual's message or, if all of the specific choices given are examples of ineffective communication techniques, will be "None of the above."

3. An answer choice that is a clear and direct statement of the individual's message will exemplify the following techniques of effective communication:

    a. The message states the entire intended message, not just a portion of it.

    b. The individual is direct and specific in communicating the intended message.

    c. The individual uses words and phrases whose meanings are clear and easily understood.

    d. The individual uses the word "I" in the quotation.

4. The incorrect answer choice will be a quotation that is ineffective in communicating the individual's message. "None of the above" will be an incorrect answer if a correct answer is provided as one of the other answer choices.

5. An incorrect answer choice that is ineffective in communicating the individual's message will exemplify one of the following ineffective communication techniques:

    a. Overgeneralized Message - individuals assume either that a single experience is representative of all experiences (e.g., "People should try to stop smoking only when they aren't under pressure at work"), or that particular behaviors always occur in certain circumstances (e.g., "It will always be difficult for me not to smoke when I'm under pressure at work.")

b. Crystal Ball Message - individuals assume that others already know how they feel or what they want to communicate (e.g., "You know what I mean about work pressure and smoking.")

c. Judgment Message - individuals blame or criticize (e.g., "You are blind not to see how difficult it is for me to stop smoking when there's pressure at work.")

d. Incomplete Message - individuals provide only part of the information needed to send a complete message (e.g., "I'm under so much pressure at work.")

4. The response option "None of the above" will be the correct response for approximately one-fourth of the test items.

5. Answer choices will be no longer than 20 words and will contain no words above an eighth grade level as listed on the IOX Basic Skills Word List.

TEST SPECIFICATIONS

TALKING ABOUT SMOKING

GENERAL DESCRIPTION

Children are presented with descriptions of fictitious persons who want either to express their feelings about not smoking or to tell others that they don't wish to smoke. Children are asked to select from among three statements the one that most clearly and directly communicates the fictitious person's message.

SAMPLE ITEM

This test is about young people who want to tell how they feel about smoking cigarettes. Read about each person. Then choose the most clear and direct way of saying what the person wants to tell. Circle the letter of this choice.

1. While on a camping trip, some boys told Roger that he was chicken because he wouldn't sneak off with them to smoke a cigarette. Roger wants to tell his father that he is upset about this. The most clear and direct way for Roger to say this is:

   A. "Several boys on the camping trip told me that I was chicken." (incomplete message)

   B. "You must know how bad I feel about being called chicken for not smoking." (crystal ball message)

   C. "I feel upset because some of the other boys called me chicken for not smoking." (correct)

STIMULUS ATTRIBUTES

1. Test items will begin with brief descriptions of fictitious young people who either want to express their feelings about not smoking or want to tell other people that they don't want to smoke cigarettes. Each description will be followed by the directive: "The most clear and direct way for (name of individual) to say this is:"

2. The situation described in a test item will include the following elements:

    a. a description of the problem or situational context

    b. a description of the contents of the intended message

    c. a phrase indicating to whom the message is being communicated (optional)

3. The types of messages eligible for testing are as follows:

    a. Feelings about not smoking - individuals communicate their feelings regarding their efforts not to smoke. These feelings may cover a range of emotions, from elation at not smoking to depression when encountering peer pressure to smoke.

    b. Communications about the desire not to smoke - individuals who do not want to smoke communicate this message to others who want them to smoke.

4. The stimulus portion of a test item will be no longer than 50 words and will contain no words above a fourth grade level as listed in the *IOX Basic Skills Word List*.

RESPONSE ATTRIBUTES

1. Three answer choices will follow each test question. Each choice will be a quotation which is a plausible statement of the message to be communicated.

2. The correct answer choice will be a clear and direct statement of the individual's message. It will exemplify the following techniques of effective communication:

    a. The message states the entire intended message, not just a portion of it.

    b. The individual is direct and specific in communicating the intended message.

    c. The individual uses words and phrases whose meanings are clear and easily understood.

    d. The individual uses the word "I" in the quotation.

An incorrect answer choice will be ineffective in communicating the individual's message. It will exemplify one of the following ineffective communication techniques:

a. Overgeneralized Message - individuals assume either that a single experience is representative of all experiences (e.g., "Everyone gets upset when they're called names."), or that particular behaviors always occur in certain circumstances (e.g., "I'll always get upset when I'm called names for not smoking.")

b. Crystal Ball Message - individuals assume that others already know how they feel or what they want to communicate (e.g., "You must know how bad I feel about being called chicken for not smoking.")

c. Judgment Message - individuals blame or criticize (e.g., "You must be blind not to notice how upset I am about those boys calling me chicken.")

d. Incomplete Message - individuals provide only part of the information needed to send a complete message (e.g., "Several boys on the camping trip told me that I was chicken.")

4. Answer choices will be no longer than 20 words and will contain no words above a fourth grade level as listed in the IOX Basic Skills Word List.

TEST SPECIFICATIONS

RESPONDING TO OTHERS ABOUT SMOKING

GENERAL DESCRIPTION

Individuals are presented with statements by fictitious persons. The statements either express a person's feelings about efforts to stop smoking or request assistance with stop smoking efforts. Individuals are to select from among four statements the response that best communicates acceptance and understanding of the fictitious person's situation.

SAMPLE ITEM

This test presents statements by individuals who want to communicate their feelings about smoking. Read each statement. Then circle the letter of the response that best communicates acceptance and understanding of the message.

1. Jane: "I've been trying to stop smoking, but I'm under so much pressure at work that I'm afraid I might break down and have a cigarette."

The response that best communicates acceptance and understanding of Jane's situation is:

A. "You feel that way because you don't think your work is going very well." (diagnosing)

B. "You don't have any will power if you break down at work and have a cigarette. (critizing/disagreeing)

C. "You'll be sorry later if you break down and have a cigarette at work today." (warning)

D. "You're fearful that when you're under pressure at work you won't have the will power to keep from smoking. (correct)

STIMULUS ATTRIBUTES

1. Test items will begin with statements by fictitious persons who want either to communicate their feelings about stopping smoking or to request assistance with their stop smoking efforts. Each statement will be followed by the directive, "The response that best communicates acceptance and understanding of (name of individual) is:

2. The statement presented in a test item will include the following elements:

   a. a description of the problem or situational context and

   b. a description of the message contents

3. The types of messages eligible for testing are as follows:

   a. Feelings regarding efforts to stop smoking - individuals communicate their feelings regarding the success or failure of their efforts to stop smoking. These feelings may cover a range of emotions from despair to elation.

   b. Requests for assistance with stop smoking efforts - individuals who are trying to stop smoking ask others for help with their stop smoking efforts. Requests for assistance may include asking for help in keeping track of the number of cigarettes smoked, asking others not to "lend" cigarettes to the individual, or asking others not to smoke while in their presence.

4. The stimulus portion of a test item will be no longer than 45 words and will contain no words above an eighth grade level as listed in the IOX Basic Skills Word List.

RESPONSE ATTRIBUTES

1. Four answer choices will follow each test question. Each choice will be a quotation which is a plausible response to the message being communicated.

2. The correct answer choice will exemplify the following techniques of effective responding:

    a. The respondent accurately paraphrases all of the sender's message.

    b. The respondent includes the word "you."

    c. By choice of words and by avoidance of any judgments, criticisms, or directives, the respondent implies respect, acceptance, and understanding for the sender.

3. An incorrect answer choice will exemplify one of the following ineffective communication techniques:

    a. Directing - the respondent tells the message sender how to solve the problem or suggests what to do (e.g., "Try to reduce some of the pressure at work so that you won't be tempted to smoke.")

    b. Warning - the respondent tells the message sender the consequences that will occur, with or without presenting facts or logic, or tells the message sender to consider the consequences (e.g., "You'll be sorry later if you break down and have a cigarette today.")

    c. Criticizing/Disagreeing - the respondent criticizes or disagrees with the message sender (e.g., "You don't have any will power if you break down and have a cigarette now.")

    d. Diagnosing - the respondent provides motives or explanations (e.g., "You feel that way because you don't think your work is going very well.")

4. Answer choices will be no longer than 20 words and will contain no words above an eighth grade level as listed in the IOX Basic Skills Word List.

TEST SPECIFICATIONS

PEOPLE PROFILES

GENERAL DESCRIPTION

This measure uses a semantic differential technique in which individuals are asked to describe smokers and nonsmokers, using a series of bipolar adjectives. These adjectives relate to the characteristics of health, aesthetic appeal, athletic ability, and social acceptability.

SAMPLE ITEM

What are your impressions of Smokers and Nonsmokers? Please respond to the two questions below by placing checks in the appropriate places on each scale. The closer a check is to one end of the scale, the more the word or phrase at that end of the scale reflects your impressions.

For example, if you were asked to describe babies, you might respond as follows:

HOW WOULD YOU DESCRIBE BABIES?

Little ____ : __✓__ : ____ : ____ : ____ Big
Old ____ : ____ : ____ : ____ : __✓__ Young
Fat ____ : ____ : __✓__ : ____ : ____ Thin

HOW WOULD YOU DESCRIBE SMOKERS?

Attractive ____ : ____ : ____ : ____ : ____ Unattractive

STIMULUS ATTRIBUTES

1. The inventory will consist of two sections. The first section will be preceded by the question:

HOW WOULD YOU DESCRIBE SMOKERS?

The second section will be preceded by the question:

HOW WOULD YOU DESCRIBE NONSMOKERS?

2. A set of bipolar adjective pairs will follow each boxed question. The set of adjectives will be the same for each section. Respondents will use these sets of adjectives to describe smokers and nonsmokers.

3. The sets of bipolar adjectives will equally reflect the four characteristics of health, aesthetic appeal, athletic performance, and social desirability.

4. The two bipolar adjective pairs for a particular characteristic will be presented such that the positive member of one pair and the negative member of the other pair appear on the left-hand side of the continuum.

5. Each member of an adjective pair will be three words or less in length. The words used will not exceed the eighth grade level on the IOX Basic Skills Word List.

RESPONSE ATTRIBUTES

1. Five response blanks, separated by colons, will be available for each adjective pair.

2. Respondents are to place a check in the blank that indicates the position on the continuum between the two members of an adjective pair that best characterizes their impression of the object of the question.

SCORING AND INTERPRETATION

1. The rational underlying this measure is that the more often respondents perceive (a) nonsmokers as healthy, aesthetically appealing, able to perform athletically, and socially acceptable and (b) smokers as unhealthy, aesthetically unappealing, unable to perform athletically, and socially unacceptable, the more negative the perceived consequences of smoking are for these respondents.

2. Point values are assigned to items according to the target concept being rated and the position of the positive and negative adjectives, as follows:

HOW WOULD YOU DESCRIBE SMOKERS?

positive adjective: 1 : 2 : 3 : 4 : 5 : negative adjective
negative adjective: 5 : 4 : 3 : 2 : 1 : positive adjective

HOW WOULD YOU DESCRIBE NONSMOKERS?

positive adjective: 5 : 4 : 3 : 2 : 1 : negative adjective
negative adjective: 1 : 2 : 3 : 4 : 5 : positive adjective

3. High scores reflect a strong belief that nonsmokers are healthier, more aesthetically appealing, better able to perform athletically, and more socially accepted than individuals who smoke.

MEASURE FORMAT

The following plan indicates the key characteristics of the "People Profiles" inventory developed from these test specifications.

Item	Object	Characteristic	Adjective at Left Pole
1	Smoker	Aesthetic appeal	Positive
2	Smoker	Athletic performance	Positive
3	Smoker	Aesthetic appeal	Negative
4	Smoker	Health	Positive
5	Smoker	Athletic performance	Negative
6	Smoker	Social acceptability	Negative
7	Smoker	Health	Negative
8	Smoker	Social acceptability	Positive
9	Nonsmoker	Aesthetic appeal	Positive
10	Nonsmoker	Athletic performance	Positive
11	Nonsmoker	Aesthetic appeal	Negative
12	Nonsmoker	Health	Positive
13	Nonsmoker	Athletic performance	Negative
14	Nonsmoker	Social acceptability	Negative
15	Nonsmoker	Health	Negative
16	Nonsmoker	Social acceptability	Positive

TEST SPECIFICATIONS
THINK ABOUT PEOPLE

GENERAL DESCRIPTION

This measure is designed to assess children's beliefs about the effects of smoking. Children are presented with one-sentence descriptions of individuals. Each individual is described according to his or her general state of health, aesthetic appeal, athletic performance, or social acceptability. Children are asked to indicate whether they think the person being described smokes or not.

SAMPLE ITEM

The questions below asks about different people you don't know. Circle the word that shows what you think about a person.

YES = The person probably smokes
MAYBE = Not sure if the person smokes
NO = The person probably does not smoke

YES MAYBE NO 1. Gregg has many friends. Do you think he smokes?

STIMULUS ATTRIBUTES

1. An item will consist of a single-sentence description of a hypothetical named boy or girl followed by the question, "Do you think he (she) smokes?"

2. Each individual will be described according to one of the following characteristics: general state of health, aesthetic appeal, athletic performance, and social acceptability. A characteristic will be presented in either positive or negative form.

3. The inventory will contain a proportionate number of items describing boys and girls. These items will equally represent the positive and negative aspects of the four characteristics listed in Stimulus Attribute No. 2.

4. Descriptions will be no longer than 10 words in length and will contain no words above a fourth grade level on the IOX Basic Skills Word List.

RESPONSE ATTRIBUTES

1. The following three response options will be available for each item.

YES = The person probably smokes
MAYBE = Not sure if the person smokes
NO = The person probably does not smoke

2. Children are to use the response options to indicate whether they think the described person smokes. Children circle the letter of their response to the left of each item.

SCORING AND INTERPRETATION

1. The rationale underlying this measure is that children who believe that nonsmokers are healthier, more aesthetically appealing, better able to perform athletically, and more socially accepted than individuals who smoke will more frequently (a) indicate that a person displaying a positive aspect of one of those characteristics does not smoke and (b) indicate that a person displaying a negative aspect of one of those characteristics does smoke.

2. Point values are assigned to items according to the characteristics displayed by the person described and the respondent's belief about this person's smoking behavior. If the person described displays a positive characteristic, then responses are assigned the following values: YES = 0, MAYBE = 1, NO = 2. If the person described displays a negative characteristic, the responses are assigned the following values: YES = 2, MAYBE = 1, NO = 0.

3. High scores indicate a strong belief that smokers are healthier, more aesthetically appealing, better able to perform athletically, and more socially accepted than individuals who smoke.

MEASURE FORMAT

The following plan indicates the key characteristics of the "Think About People" inventory developed from these test specifications.

Item	Type of Characteristic	Nature of Characteristic	Sex of Described Person
1	Social acceptability	Positive	Male
2	Aesthetic appeal	Positive	Female
3	Aesthetic appeal	Negative	Female
4	Health	Negative	Male
5	Athletic performance	Positive	Male
6	Social acceptability	Positive	Female
7	Health	Negative	Female
8	Social acceptability	Negative	Male
9	Health	Positive	Male
10	Athletic performance	Negative	Female
11	Athletic performance	Negative	Male
12	Health	Positive	Female
13	Social acceptability	Negative	Female
14	Athletic performance	Positive	Female
15	Aesthetic appeal	Positive	Male
16	Aesthetic appeal	Negative	Male

TEST SPECIFICATIONS
REFRAINING FROM SMOKING

GENERAL DESCRIPTION

This measure is designed to assess individuals' perceived self-efficacy in being able to resist urges to smoke. Individuals are presented with a series of items describing situations in which people often experience an urge to smoke and asked to indicate if they can refrain from smoking in each situation. If individuals indicate that they can refrain, then they are asked to estimate, on a 10 to 100 numerical scale, how confident they are of their ability to refrain from smoking in that situation.

SAMPLE ITEM

This survey describes various times when people often feel an urge to smoke. Read each statement. Circle YES or NO to show if you could refrain or keep from smoking at that time. If you circle YES, then use the Confidence Scale to show how certain you are of your answer.

The following examples show how the Confidence Scale is used.

Physical Strength Examples	**CAN YOU DO THIS?**	**IF YES, HOW CERTAIN ARE YOU?**
You can lift a 50 pound weight.	**[✓ YES]/NO**	70
You can lift a 200 pound weight.	**YES/[✓ NO]**	____

Confidence Scale

10	20	30	40	50	60	70	80	90	100
Very Uncertain				Somewhat Certain					Very Certain

		CAN YOU REFRAIN FROM SMOKING?	IF YES, HOW CERTAIN ARE YOU?
1.	You have just finished an enjoyable meal.	YES/NO	_____

STIMULUS ATTRIBUTES

1. An item will describe a situation which, for many people, triggers an urge to smoke. The item will be written in second person and will refer to someone's participation or feelings in a situation, for example, "You have been watching television for quite a while."

2. The situations presented in test items will be drawn from those in which urges to smoke are triggered by habit, pleasure, tension-reduction, social pressure, or addiction (that is, a strong craving to smoke).

3. Situations will be selected to be applicable to most individuals. For example, a situation describing an individual's drinking cocktails at a party would not be used since a substantial number of individuals do not consume alcoholic beverages. Situations describing the consumption of non-alcoholic beverages, however, would be appropriate.

4. All situations will be described in terms that are as general as possible so that most respondents will be likely to identify personally with those situations.

5. Each item will be 20 words or less in length. The words used will not exceed the eighth grade level on the IOX Basic Skills Word List.

RESPONSE ATTRIBUTES

1. Two response opportunities are available for each item, a YES/NO answer and a confidence rating.

2. Respondents are to use the YES/NO option to indicate whether they can refrain from smoking in the situation given.

3. If respondents answer YES to an item, they are then to indicate how confident they are that they can refrain from smoking in the situation described by selecting a number from the following confidence scale:

Confidence Scale

10	20	30	40	50	60	70	80	90	100
Very Uncertain				Somewhat Certain					Very Certain

SCORING AND INTERPRETATION

1. The rationale underlying this measure is that the more often respondents indicate that they can, with a high degree of confidence, refrain from smoking, the stronger the perceived self-efficacy of those respondents in being able to refrain from smoking.

2. This inventory can be scored in several ways, two of which are described here. In the first procedure, the number of YES responses is used as a gross index of an individual's perceived ability to refrain from smoking. The more YES responses, the more situations in which an individual believes that he or she can refrain from smoking.

   A combined analysis of YES/NO responses and confidence ratings allows for a more complete assessment of program effectiveness, as it incorporates both sources of information in a single index. This analysis is accomplished by computing the mean strength of the rated ability across all items; that is, by dividing the sum of the confidence ratings made in conjunction with "YES" responses by the number of items in the questionnaire. High scores reflect a strong perceived ability to refrain from smoking across a variety of settings, along with a high level of confidence in that ability.

TEST SPECIFICATIONS

SMOKING SURVEY

GENERAL DESCRIPTION

This measure is designed to assess the extent to which individuals intend to refrain from smoking. Individuals are asked whether they intend to refrain from smoking for the next 12 months. If individuals indicate that they intend to refrain from smoking for the next 12 months, then they are asked to estimate, on a 10 to 100 numerical scale, the strength of their intention.

SAMPLE ITEM

> **This survey asks about your intention to refrain from smoking.**
>
> **Please answer Question 1. If your answer to Question 1 is "YES," please answer Question 2.**

1. Do you intend to refrain from smoking for the next 12 months? (Circle One)

YES NO

STIMULUS ATTRIBUTES

1. This measure consists of two items that, in conjunction, elicit whether respondents intend to refrain from smoking for the next 12 months and, if so, the strength of that intention.

2. The words used will not exceed the eighth grade level on the IOX Basic Skills Word List, except for the following word: refrain.

RESPONSE ATTRIBUTES

1. Respondents circle YES or NO to indicate whether they intend to refrain from smoking for the next 12 months.

2. If respondents indicate that they intend to refrain from smoking for the next 12 months, they are then to indicate the strength of their intention, using the following scale:

10	20	30	40	50	60	70	80	90	100
Very Weak									Very Strong

3. Individuals circle the appropriate response to each question.

SCORING AND INTERPRETATION

1. The rationale underlying this measure is that respondents who indicate they have a strong intention to refrain from smoking are more likely not to smoke.

2. Point values are assigned to items according to the degree of intention of respondents to refrain from smoking, as follows: YES = 1, NO = 0. Point values on the strength of intention scale are the numerical values of the responses.

3. High scores indicate a strong intention to refrain from smoking.

TEST SPECIFICATIONS
ABOUT SMOKING

GENERAL DESCRIPTION

This measure is designed to assess the extent to which children intend to refrain from smoking. Children are asked whether they intend to smoke any cigarettes during the next 12 months. They are to select the response that best describes their future behavior.

SAMPLE ITEM

> **Please circle your answer to the following question about smoking.**

1. Will you smoke any cigarettes during the next 12 months?

   CERTAINLY YES   PROBABLY YES   MAYBE   PROBABLY NOT   CERTAINLY NOT

STIMULUS ATTRIBUTES

1. The measure consists of one item that asks children if they will smoke any cigarettes during the next 12 months.

2. The words used will not exceed the fourth grade level on the IOX Basic Skills Word List, except for the following word: cigarette.

RESPONSE ATTRIBUTES

1. The following five response options will be available for the item: CERTAINLY YES, PROBABLY YES, MAYBE, PROBABLY NOT, and CERTAINLY NOT.

2. Children circle the appropriate response to the question.

SCORING AND INTERPRETATION

1. The rationale underlying this measure is that children who indicate that they do not expect to smoke any cigarettes are more likely to refrain from smoking.

2. Point values are assigned to items according to the certainty with which children indicate that they will smoke cigarettes: CERTAINLY YES = 1 point, PROBABLY YES = 2 points, MAYBE = 3 points, PROBABLY NOT = 4 points, CERTAINLY NOT = 5 points.

3. High scores indicate a strong intention to refrain from smoking.

TEST SPECIFICATIONS

IDEAS ABOUT SYSTEMATIC DECISION-MAKING

GENERAL DESCRIPTION

This inventory is a Likert scale in which respondents are asked to register their degree of agreement with a series of statements about making decisions systematically.

SAMPLE ITEM

This survey is about making decisions systematically. Please respond to all the statements in the survey.

Read each statement. Decide the extent to which you agree with it. Circle the appropriate letter to the left of the statement. Use the following scale:

SA = Strongly Agree
A = Agree
U = Uncertain
D = Disagree
SD = Strongly Disagree

SA A U D SD 1. Systematic decision-making takes too much time.

STIMULUS ATTRIBUTES

1. An item will consist of a statement about the utility of making decisions systematically.

2. The inventory will contain an equal number of items in which systematic decision-making is seen as positive and items in which systematic decision-making is seen as negative or as being of no advantage.

3. Each statement will be 25 words or less in length. The words used will not exceed the eighth grade level on the IOX Basic Skills Word List, except for the following word: systematic.

RESPONSE ATTRIBUTES

1. The following five response options will be available for each item:

   SA = Strongly Agree
   A = Agree
   U = Uncertain
   D = Disagree
   SD = Strongly Disagree

2. Respondents are to use the response options to indicate the extent to which their beliefs about systematic decision-making are properly represented in an item's statement. Respondents circle the letter of their response to the left of each item.

SCORING AND INTERPRETATION

1. The rationale underlying this measure is that respondents who believe in the utility of making decisions systematically will more frequently (a) agree with positive statements about systematic decision-making and (b) disagree with negative statements about systematic decision-making or statements that describe it as being of no advantage.

2. Point values are assigned to items according to whether systematic decision-making is seen as positive or non-positive (i.e., neutral or negative). Items that present a positive statement about systematic decision-making are assigned the following values: SA = 5 points, A = 4 points, U = 3 points, D = 2 points, SD = 1 point. Items that present a non-positive statement about systematic decision-making are assigned the following values: SA = 1 point, A = 2 points, U = 3 points, D = 4 points, SD = 5 points.

3. High scores indicate a strong belief in the utility of making decisions systematically.

MEASURE FORMAT

1. The following plan indicates the key characteristics of the "Ideas About Systematic Decision-Making" inventory developed from these test specifications.

Item	Systematic Decision-Making
1	Yes
2	No
3	Yes
4	No
5	No
6	Yes
7	No
8	Yes
9	No
10	Yes
11	No
12	Yes
13	Yes
14	No
15	No
16	Yes
17	No
18	Yes
19	Yes
20	No

TEST SPECIFICATIONS

IDEAS ABOUT DECISIONS

GENERAL DESCRIPTION

This inventory is a Likert scale in which children are asked to register their degree of agreement with a series of statements about systematic decision-making.

SAMPLE ITEM

> **The statements below are about making decisions. Circle the word that shows how much you agree with each statement.**
>
> **YES = I agree**
> **MAYBE = I am not sure if I agree**
> **NO = I do not agree**

YES MAYBE NO 1. It is worth the time to make decisions carefully.

STIMULUS ATTRIBUTES

1. An item will consist of a statement about the utility of making decisions systematically.

2. The inventory will contain an equal number of (a) items in which systematic decision making is seen as positive and (b) items in which systematic decision-making is seen as negative or as being of no advantage.

3. Each statement will be 20 words or less in length. The words used will not exceed the fourth grade level on the IOX Basic Skills Word List, except for the following word: decision.

RESPONSE ATTRIBUTES

1. The following three response options will be available for each item:

   YES = I agree
   MAYBE = I am not sure if I agree
   NO = I do not agree

2. Children are to use the response options to indicate the extent to which their beliefs about systematic decision-making are properly represented in an item's statement. Respondents circle the word of their response to the left of each item.

SCORING AND INTERPRETATION

1. The rationale underlying this measure is that respondents who believe in the utility of making decisions systematically will more frequently (a) agree with positive statements about systematic decision-making and (b) disagree with negative statements about systematic decision-making or statements that describe it as being of no advantage.

2. Point values are assigned to items according to whether systematic decision-making is seen as positive or non-positive (i.e., neutral or negative). Items that present a positive statement about systematic decision-making are assigned the following values: YES = 2 points, MAYBE = 1 point, NO = 0 points. Items which present a non-positive statement about systematic decision-making are assigned the following values: YES = 0 points, MAYBE = 1 point, NO = 2 points.

3. High scores indicate a strong belief in the utility of making decisions systematically.

MEASURE FORMAT

1. The following plan indicates the key characteristics of the "Ideas About Decisions" inventory developed from these test specifications.

Item	Systematic Decision-Making
1	Yes
2	No
3	Yes
4	No
5	No
6	No
7	Yes
8	No
9	Yes
10	Yes

TEST SPECIFICATIONS

WOULD YOU USE SYSTEMATIC DECISION-MAKING?

GENERAL DESCRIPTION

This measure is designed to assess the extent to which individuals intend to use systematic decision-making. Individuals are asked whether they would use systematic decision-making in a variety of situations. If individuals indicate that they would use systematic decision-making, they are asked to estimate, on a 10 to 100 numerical scale, how confident they are of their intention.

SAMPLE ITEM

This survey describes situations in which people might use systematic decision-making. Read each statement. Circle Yes or No to indicate whether you would use systematic decision-making in the situation described in the item.

If you circle Yes, then use the Confidence Scale to show how certain you are that you would use systematic decision-making in that situation.

The following examples show how the Confidence Scale is used.

	WOULD YOU USE SYSTEMATIC DECISION-MAKING?	**IF YES, HOW CERTAIN ARE YOU?**
1. You are deciding on a career.	**[✓ YES]/NO**	90
2. You are choosing where to eat lunch.	**[✓ YES]/NO**	70
3. You are swerving to avoid a car accident.	**YES/[✓ NO]**	

Confidence Scale

10	20	30	40	50	60	70	80	90	100
Very Uncertain				Somewhat Certain					Very Certain

SITUATION	WOULD YOU USE SYSTEMATIC DECISION-MAKING?	IF YES, HOW CERTAIN ARE YOU?
1. You are deciding whether to start an exercise program.	YES/NO	______

STIMULUS ATTRIBUTES

1. A test item will consist of a description of a situation in which a decision is being made.

2. Situations will involve either health-related decisions (e.g., choosing a diet), or situations in which there is external pressure to make a decision (e.g., being rushed by others to make a decision).

3. All situations will be applicable to most individuals. For example, an item describing an individual's making a decision while busy because of a job will not be used because potential respondents might not hold jobs. Items in which individuals are generally busy, however, would be appropriate.

4. Each item will be written in the second person and will be 20 words or less in length. The words used will not exceed the eighth grade level of the IOX Basic Skills Word List, except for the following word: stress.

RESPONSE ATTRIBUTES

1. For each item, two response opportunities are available, a YES/NO answer and a confidence rating.

2. Respondents are to use the YES/NO option to indicate whether they intend to use systematic decision-making in the situation described in the item.

3. If respondents answer YES to an item, they are then to indicate how confident they are that they would use systematic decision-making in the situation, using the following Confidence Scale:

Confidence Scale

10	20	30	40	50	60	70	80	90	100
Very Uncertain				Somewhat Certain					Very Certain

SCORING AND INTERPRETATION

1. The rationale underlying this measure is that the more situations in which respondents indicate that they intend, with a high degree of confidence, to use systematic decision-making, the stronger the overall intention of those respondents to use systematic decision-making.

2. This measure can be scored in several ways, two of which are described here. In the first procedure, the number of YES responses is used as a gross index of an individual's intention to use systematic decision-making. The more YES responses, the more situations in which an individual intends to use systematic decision-making.

A combined analysis of YES/NO responses and confidence ratings allows for a more complete assessment of program effectiveness, as it incorporates both sources of information in a single index. This analysis is accomplished by computing the mean strength of the confidence ratings across all items, that is, by dividing the sum of the confidence ratings made in conjunction with "YES" responses by the number of items in the measure. High scores reflect a strong intention to use systematic decision-making in a variety of situations.

TEST SPECIFICATIONS

WOULD YOU MAKE CAREFUL DECISIONS?

GENERAL DESCRIPTION

Children are asked whether they would make a careful decision in a variety of situations. They are then asked to select the response that best describes their intentions.

SAMPLE ITEM

Read each question. Then put a check (√) under the answer that best tells if you would make a careful decision.

Would you make a careful decision when...	CERTAINLY YES	PROBABLY YES	MAYBE	PROBABLY NOT	CERTAINLY NOT
1. ... you are deciding how to relax?	___	___	___	___	___

STIMULUS ATTRIBUTES

1. An item will specify a situation in which a decision is being made, and will require children to indicate if they would make a careful decision in that situation.

2. Situations will involve either health-related decisions (e.g., deciding whether to smoke cigarettes), or situations in which there is external pressure to make a decision (e.g., being rushed to decide quickly).

3. Activities will be selected to be applicable to most children. For example, an activity such as choosing a team sport to play will not be used because potential respondents might not enjoy team sports. Activities in which individuals are choosing a way to exercise, however, would be appropriate.

4. Each item will be 15 words or less in length. The words used will not exceed the fourth grade level of the IOX Basic Skills Word List, except for the following words: alcohol, cigarettes, drugs, relax.

RESPONSE ATTRIBUTES

1. The following five response options will be available for each item: CERTAINLY YES, PROBABLY YES, MAYBE, PROBABLY NOT, and CERTAINLY NOT.

2. Children are to use the response options to indicate their intention to make a careful decision in the specified situation. Respondents place a check in the appropriate space to the right of each item.

SCORING AND INTERPRETATION

1. The rationale underlying this measure is that the more situations in which children indicate that they intend to make careful decisions, the stronger the overall intention of those children to use systematic decision-making.

2. Point values are assigned to items according to the certainty with which respondents indicate that they intend to make careful decisions, as follows: CERTAINLY YES = 5, PROBABLY YES = 4, MAYBE = 3, PROBABLY NOT = 2, CERTAINLY NOT = 1.

3. High scores indicate a strong intention to use systematic decision-making in a variety of situations.

TEST SPECIFICATIONS

MY BODY

GENERAL DESCRIPTION

This measure is designed to assess children's respect for their bodies. Children are asked to indicate whether they would engage in activities that are healthful and avoid activities that are harmful to the body.

SAMPLE ITEM

Read each question. Then put a check (√) under the answer that best tells what you are willing to do to take care of your body.

In order to take care of your body, are you willing to ...	CERTAINLY YES	PROBABLY YES	MAYBE	PROBABLY NOT	CERTAINLY NOT
1. ... exercise several times each week?	___	___	___	___	___

STIMULUS ATTRIBUTES

1. An item will specify a healthful activity or the avoidance of a harmful activity. Individuals are to indicate if they would be willing to take care of their bodies even if it means engaging in the healthful activity or avoiding the harmful activity.

2. The activities presented in the test items will be important to maintaining healthy bodies. These activities will include exercising; getting adequate rest; avoiding cigarettes, alcohol, and unnecessary drugs; following doctor's orders; seeing a doctor regularly; obtaining immunizations; eating properly; and avoiding unnecessary stress.

3. Each item will be 10 words or less in length. The words used will not exceed the fourth grade level on the IOX Basic Skills Word List, except for the following words: alcohol, cigarettes, diseases, immunizations.

RESPONSE ATTRIBUTES

1. The following five response options will be available for each item: CERTAINLY YES, PROBABLY YES, MAYBE, PROBABLY NOT, and CERTAINLY NOT.

2. Children are to use the response options to indicate their willingness to take care of their bodies in the specified manner. Respondents are to place a check in the appropriate space to the right of each item.

SCORING AND INTERPRETATION

1. The rationale underlying this measure is that the more often children indicate that they are willing, with certainty, to take care of their bodies by engaging in healthful activities and avoiding harmful ones, the stronger their respect for their bodies.

2. Point values are assigned to items according to the certainty of the children in being willing to take care of their bodies, as follows: CERTAINLY YES = 5 points, PROBABLY YES = 4 points, MAYBE = 3 points, PROBABLY NOT = 2 points, CERTAINLY NOT = 1 point.

3. High scores indicate a strong respect for one's body, as evidenced by a willingness to engage in activities that are healthful and to avoid those that are not.

ANNOTATED EVALUATION BIBLIOGRAPHY

(1) American Psychological Association. Ethical principles in the conduct of research with human participants. Washington, D.C.: Author, 1973.

This treatise focuses on the appropriateness of carrying out various types of research investigations with human subjects. Because the American Psychological Association has had a long-standing concern about ethical issues in the conduct of research investigations, this publication will be of interest to numerous evaluators of health education programs.

(2) American Psychological Association, American Educational Research Association, National Council on Measurement in Education. Standards for educational and psychological tests. Washington, D.C.: Author, 1974.

This soon-to-be-revised volume presents the most widely used set of standards for psychological and educational tests. Frequently cited by users of educational tests, the standards have recently been employed in numerous judicial deliberations. Relatively brief, the standards should be consulted by health educators who employ assessment devices regularly.

(3) Anderson, L.W. Assessing affective characteristics in the schools. Boston: Allyn and Bacon, 1981.

Anderson provides an excellent set of practical suggestions for the creation of affective assessment instruments. He includes one of the most easily understood expositions of various scaling procedures including Likert, Thurstone, and Guttman scales.

(4) Berk, R.A. (Ed.) Criterion-referenced measurement: the state of the art. Baltimore: The Johns Hopkins University Press, 1980.

This collection of essays consists of papers presented at the first Johns Hopkins University National Symposium on Educational Research. The authors treat many of the important problems, both conceptual and technical, facing developers and users of criterion-referenced measures.

(5) Berk, R.A. (Ed.). Handbook of methods for detecting test bias. Baltimore: The Johns Hopkins University Press, 1982.

This collection of individual essays offers the reader an up-to-date depiction of methods currently available to detect the presence of bias in tests.

(6) Campbell, D.T., & Stanley, J.C. Experimental and quasi-experimental designs for research. Chicago: Rand McNally, 1966.

This volume, originally a chapter in a larger volume, has had substantial impact on the fields of research and evaluation. Evaluators of health education programs will wish to consider this truly classic treatment of data-gathering designs suitable for experimental and quasi-experimental settings.

(7) Churchill, G.A., Jr. Marketing research: methodological foundations (2nd ed.). Hinsdale, Ill: The Dryden Press, 1979.

Although written in the context of marketing research, this textbook covers several topics of vital importance in evaluation. Topics such as research design, data collection, sampling, and data analysis are covered in a readily understandable yet accurate way. An excellent resource.

(8) Cohen, J. Statistical power analysis for the behavioral sciences (Rev. ed.). New York: Academic Press, 1977.

Cohen offers a useful treatment of factors which should be considered when one draws samples for use in research or evaluation activities. Of special interest is the set of easy-to-use guidelines he offers for determining the estimated sample size necessary to detect differences between groups.

(9) Cook, T.D., & Campbell, D.T. The design and conduct of quasi-experiments and true experiments in field settings. In M.D. Dunnette (Ed.), Handbook of industrial and organizational psychology. Chicago: Rand McNally, 1976.

This is an updated version of the famous exposition of quasi-experimental and experimental data-gathering designs by Donald T. Campbell and Julian C. Stanley (see Reference No. 6). An excellent discussion of four types of validity is featured in this essay.

(10) Cook, T.D., & Campbell, D.T. Quasi-experimentation: design & analysis issues for field settings. Chicago: Rand McNally, 1979.

This widely cited volume provides a comprehensive treatment of quasi-experimental investigations in settings of substantial relevance to the concerns of health educators. There are excellent discussions of internal and external validity, including the various threats to both types of validity. A systematic consideration of the commonly used data-gathering designs is offered, including an extended appraisal of interrupted time-series designs.

(11) Cronbach, L.J. Course improvement through evaluation. Teachers College Record, May 1963, 64, 672-683.

An early piece, presenting the virtues of what would later be termed "formative" evaluation. This article rings as true today as it did nearly two decades ago, and it applies as much to evaluation in health education as it does to more traditional evaluation. Emphasizing the role of evaluation in gathering information that can improve programs, this article is well worth reading.

(12) Cronbach, L.J., and associates. Toward reform of program evaluation. San Francisco: Jossey-Bass, 1981.

A recent publication, this book considers the function of evaluation in a pluralistic society and presents 95 theses on the role of evaluators and evaluations. In addition to providing a contemporary conception of evaluation, it provides a historical and multidisciplinary perspective on the field. This volume will be of considerable interest to those evaluating health education programs.

(13) Cronbach, L.J., et al. Analysis of covariance in nonrandomized experiments: parameters affecting bias. Unpublished occasional paper, Stanford Evaluation Consortium, Stanford University, 1977.

A highly technical piece on the complications associated with using analysis of covariance, this article is recommended only for those prepared to handle a critical problem in a sophisticated way.

(14) Cronbach, L.J., & Furby, L. How should we measure 'change' - or should we? Psychological Bulletin, 1970, 74, 68-80.

A technical treatise on the dangers associated with using gain scores. A very significant piece, but recommended only for those with some psychometric training.

(15) Ebel, R.L. Essentials of educational measurement (3rd ed.). Englewood Cliffs, N.J.: Prentice-Hall, 1979.

This is a standard, easily read introductory text, covering important topics in the field of educational testing. Ebel, a prominent leader of traditional educational testing practices, provides a lucid treatment of a wide range of measurement topics.

(16) Green, L.W. Research methods translatable to the practice setting: from rigor to reality and back. In S. Cohen (Ed.) New directions in patient compliance. Lexington, Mass.: Lexington Books, 1979.

Green deals with a practical dilemma facing those who evaluate health education programs, namely, the necessity to make trade-offs between validity and feasibility in field settings. Six strategies for coping with evaluation under adverse circumstances are described.

(17) Green, L.W., & Figá-Talamanca, I. Suggested designs for evaluation of patient education programs. Health Education Monographs, September 1974, 2 (1).

In this essay Green and Figá-Talamanca suggest data-gathering designs for conducting evaluations of patient education programs. The authors also explore several issues related to evaluations of this variety.

(18) Hambleton, R.K. et al. Criterion-referenced testing and measurement: a review of technical issues and development. Review of Educational Research, Winter 1978, 48 (1), 1-48.

This is a comprehensive review of the field of criterion-referenced testing. Hambleton and his colleagues do a masterful job of isolating the key issues in criterion-referenced testing, then describing results of research investigations bearing on those issues. Somewhat technical at times, this review is one of the more widely cited essays dealing with criterion-referenced testing.

(19) Hays, W.L. Statistics for the social sciences (2nd ed.). New York: Holt, Rinehart, and Winston, 1973.

A comprehensive text dealing with basic and advanced statistical considerations. Somewhat technical at points, Hays nonetheless provides an excellent set of step-by-step guidelines to statistical practice.

(20) Hull, C., & Nie, N.H. Statistical packages for the social sciences (SPSS). New York: McGraw-Hill, 1978.

This is a widely used, well organized set of "canned" computer analysis programs for use in the social sciences. Health educators who have occasion to use computer analyses will find the SPSS manual most helpful.

(21) Joint Committee on Standards for Educational Evaluation. Standards for evaluations of educational programs, projects, and materials. New York: McGraw-Hill, 1981.

The development of these evaluation standards was spearheaded by a joint committee of the American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education. Thirty standards are presented, addressing issues related to deciding whether to evaluate, defining the evaluation problem, designing the evaluation, budgeting for the evaluation, collecting and analyzing data, and reporting the evaluation. Intended for both consumers of evaluation and individuals conducting evaluations, this reference may be of most use to evaluators who are relatively new to the field.

(22) Levin, H.M. Cost-effectiveness analysis in evaluation research. In M. Guttentag & E.L. Struening (Eds.), Handbook of evaluation research (Vol. 2). Beverly Hills, CA.: Sage, 1975.

This essay probes the important considerations involved in determining cost-effectiveness of programs in the context of educational evaluations. Theoretical as well as practical guidelines are provided.

(23) Linn, R.L., & Slinde, J.A. The determination of the significance of change between pre- and post-testing periods. Review of Educational Research, 1977, 47, 121-150.

This article reviews many of the major issues in the measurement of change from pretesting to posttesting periods and suggests possible alternatives. These authors share the general sentiment of many others in the field that, "more is expected from gain scores than they can reasonably be expected to provide."

(24) Lord, F.H. Elementary models for measuring change. In C.W. Harris (Ed.), Problems in measuring change. Madison: Wisconsin Press, 1963.

An early treatise on the problems associated with measuring change. Although this chapter rapidly becomes very technical, the early sections provide an intuitive explanation of the difficulties with using gain scores.

(25) Oakland, T. (Ed.) Psychological and educational assessment of minority children. New York: Brunner/Mazel, 1977.

This collection of essays provides a series of useful suggestions for those who would become more sensitive to the possible bias present in educational tests.

(26) Popham, W.J. Educational evaluation. Englewood Cliffs, N.J.: Prentice-Hall, 1975.

This is an introductory text, written in fairly non-technical language, about the field of educational evaluation. Evaluators of health education programs will find it simple to translate the book's contents to their own specialties.

(27) Popham, W.J. Modern educational measurement. Englewood Cliffs, N.J.: Prentice-Hall, 1981.

This is an up-to-date treatment of varied topics in the field of educational measurement. Norm-referenced measurement and criterion-referenced measurement are both considered, with the special applications of criterion-referenced assessment emphasized. Chapters on the relationship of testing to teaching and the measurement of affect will be of special interest to health educators.

(28) Popham, W.J., & Sirotnik, K.A. Educational statistics: use and interpretation (2nd ed.). New York: Harper and Row, 1973.

> *This is an easily read introductory text dealing with the fundamental types of statistical considerations needed by program evaluators. It is intended for those who are not particularly comfortable with mathematical approaches to statistics.*

(29) Riecken, H.W., & Boruch, R.F. Social experimentation: a method for planning and evaluating social intervention. New York: Academic Press, 1971.

> *This significant contribution to our thinking about large-scale social interventions, their design and appraisal, provides a useful analysis of the ways that the experimental method can be defensibly employed in connection with major social programs.*

(30) Rivlin, A.M., & Timpane, P.M. (Eds.). Ethical and legal issues in social experimentation. Washington, D.C.: Brookings Institution, 1975a.

> *Rivlin and Timpane explore the sorts of legal and ethical issues to which evaluators of health education programs must attend.*

(31) Scriven, M. The methodology of evaluation. In R.E. Stake and others (Eds.), Perspectives on curriculum evaluation. Chicago: Rand McNally, 1967.

> *This seminal article was the first essay in which Scriven distinguished between the now commonly accepted formative and summative roles of evaluators. Scriven ranges over a wide variety of topics, emphasizing the importance of comparative appraisals of two or more programs' merits.*

(32) Scriven, M. Prose and cons about goal-free evaluation. Evaluation Comment, 1972, 3, 1-4.

> *In this essay Scriven offers goal-free evaluation as an antidote to excessive preoccupation with the program staff's expressed objectives. Scriven argues that evaluators should attend to the results produced by a program, not the rhetoric of its program goals.*

(33) Siegel, S. Nonparametric statistics for the behavioral sciences. New York: McGraw-Hill, 1956.

This is the classic treatment of nonparametric statistical techniques. Although a bit out of date these days, Siegel's text offers the most easily understood treatment of nonparametric statistical procedures. Because of the author's admitted zealousness in support of nonparametric techniques, those using Siegel's text should also consult a critique of it by Robert Savage, Journal of American Statistical Association, 52 (September 1957): 331-344.

(34) Suchman, E.A. Evaluative research: principles and practice in public service and social action programs. New York: Russell Sage Foundation, 1967.

In this volume, Suchman provides extensive coverage of the application of the experimental research model in conducting evaluations. Although evaluation has come a long way since this book was written, the volume provides a clear description of the predominant conceptualization of evaluation in the past decade.

(35) Tukey, J.W. Exploratory data analyses. Reading, Mass.: Addison-Wesley, 1977.

Creative approaches to displaying and understanding data are provided by Tukey in this excellent demystification of data analysis.

(36) Webb, E.J., Campbell, D.T., Schwartz, R.D., Sechrest, L., & Grove, J.B. Nonreactive measures in the social sciences (2nd ed.). Dallas: Houghton Mifflin, 1981.

This charming volume provides readers with a series of powerful and clever tactics to secure data, particularly of an affective nature, without sensitizing respondents to the evaluator's purposes.

(37) Weiss, C.H. Evaluation research: methods of assessing program effectiveness. Englewood Cliffs, N.J.: Prentice-Hall, 1972.

Weiss offers a pithy overview of prominent program evaluation considerations including the formulation of questions to be addressed, the design of the evaluation study, and the utilization of evaluation results. A paperback, this brief book (160 pp.) offers an excellent introduction to what Weiss refers to as "evaluation research."

(38) Worthen, B.R., & Sanders, J.R. Educational evaluation: theory and practice. Worthington, Ohio: C.A. Jones 1973.

This volume was one of the earliest compilations of various program evaluation models applied to education. Evaluation theorists whose views are presented in this book include Stake, Cronbach, Scriven, Tyler and others. Worthen and Sanders have authored sections of the book and have included a series of original chapters by a number of evaluation specialists. While focused on educational evaluation in general, the volume is of substantial relevance to program evaluation of health education programs.

(39) Zdep, S.M., & Rhodes, I.N. Making the randomized response technique work. (Reprinted from The Public Opinion Quarterly, Winter 1976-1977, 41.)

This easily read essay describes the randomized response technique, a procedure used to obtain sensitive information from respondents more accurately than if respondents were directly asked about sensitive information.

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